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THE COSMIC REALITY OF HUMAN VALUES

BY THE EDITOR

In almost any other period of history than our own to attempt to justify or demonstrate the claim for the cosmic reality of human values would have seemed ridiculous or absurd. To coming generations again it will doubtless seem a perverted outlook on reality that made such demonstration appear necessary. Our heads are turned with the new wine of discovery and invention, so that we worship the material and the sensual as the only realities, while those deeper fires which burn within the soul, which make possible all inspiration to creative art, to literature, to social and spiritual achievement, are quite likely to be passed over as morbid manifestations demanding the attention of the psychoanalyst. The curious fact is that we are able to live alongside so deep an inconsistency without sensing it. However much we relegate these experiences of the soul, the existence of which we scientifically deny, to the limbo of unreality, they persist as the deeper objects of all our striving. Calling them unreal, we present the rather sorry spectacle of still living for and by them, and whatever satisfaction and richness is left in life abides through a clinging loyalty to them.

The claim is frequently made for science that while religion and philosophy possess the weakness of foundation principles by starting with a preconception, science starts from the single and only worthy principle of search for facts. Thus it is held that an inherent weakness for preconceptions invalidates the conclusions of religion and philosophy, while science, devoted to facts, moves on triumphantly and alone. Such a conclusion could be drawn only through a rather arrogant oversight of the "facts" which have to do with the foundations of scientific theory. A science which was nothing but *facts* or even knowledge of facts could lay little claim to the name of science. The value of science lies in its generalization and relation of fact to fact through which the mind builds a universe of sequences and connections, applying these generalizations to the needs of life. Frequent reference is made to the mistakes and absurdities of philosophy and religion. The change, for instance, from the conception of God as lustful, revengeful and malicious, to that of a God of tenderness, love, righteousness and truth, is mentioned as militating against all claims for the truth of religion. No very extended knowledge of history is required, however, to recall many instances in which science with unabashed confidence has been positive, but incorrect, in its assertions. No one twenty-five years out of college but has had abundant necessity to revise the theories of physics, biology and chemistry which were taught him as facts. This is due to the theoretical implications through which all facts must be interpreted. They are never so simple as they seem to the unphilosophical. Facts never stand alone nor unsupported. They are always in relation to other facts and cannot be considered apart from their relations without removing something of their factuality. Thus is shown the exceeding dependence of science upon hypotheses of relation. Far from allowing as truth the scientific claim to start without preconceptions, we are faced at the very beginning of science with the preconception of unity, of universal and uniform laws and unalterable sequences. Without these preconceptions there could be no science,[1] and, instead of raising the primary claim that all science is therefore invalidated, we rejoice in any verification of such general hypotheses as provide a working insight into the nature of reality. If science can get nowhere in the ascertainment of facts, except upon the hypothesis of the solidarity of the universe, and must in the end justify its hypotheses by the pragmatic test of values, how much deeper is the demand that in philosophical and religious thinking we should start with the hypothesis of moral and spiritual solidarity in the cosmos, the universal reality of mental, moral, and spiritual values in the experience of man. If we are to consider life as it is there is no other way. As there can be no scientific thought without the scientific assumption of universal law, so there can be no true explanation, religion, or philosophy of life without the assumption of the universal reality of human values. It is certainly bad taste if not bad faith to cling to an assumption as the foundation of science, and to deny to religion the fundamental religious assumption of the existence of God, or to philosophy the assumption of intelligent world-ground as a starting-point.

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[1] We speak here from the empirical standpoint of science itself rather than from that of philosophy. From the standpoint of philosophy, law bears with it no necessity but may be looked upon as a uniformly acting creative will. Even under this view, the uniformity is essential to scientific practice. If the forces of nature were capricious and the phenomenal orders of succession were frequently reversed, or if it were impossible to state the causal order, scientific knowledge would be impossible. It seems clear that science is dependent upon the assumption of order somewhere.

The denial of the reality of human values has arisen from an exaggerated notion of the certainty of scientific demonstration. Extreme claims have been made that scientific demonstration provides the only basis of certainty. From this the easy assumption is made that all experience resting on any other ground is false or illusory. Such confidence could never have arisen if there had been a thoughtful criticism of the nature of scientific proof. At the best, scientific demonstration is limited to appearance. It cannot enter into the essence or nature of things. If it be said that things have no essence but only activities, then the most that science can affirm is that these activities are thus and so, under certain conditions, but it has no right to declare that there are no facts other than these activities. In truth, while denying it, science does assume reality beyond the activity, and many who profess conscientious adherence to scientific fact are perfectly satisfied, so long as the essence behind the activity is assumed to be non-purposive, unintelligent matter. If some one asserts the "essence" behind the activity to be purposive intelligence, then there is a great outcry against what is declared to be unsupported fact.

The scientist indeed has no more right to be a materialist than he has to be an idealist. Neither presupposition is scientific, both are philosophical.

The field of scientific demonstration, when understood, is limited then to "activities and relations," rather than to essence, or at least to what of the essence of anything can be learned from its activity and relation. When we come into the field of human values demonstration of this kind is impossible. We get the activity of electricity, for instance, through the overcoming of resistance, the work it will do. We are thus permitted to express it in a term of relation, that is, in foot-pounds of energy. All the demonstration that is required is lifting power. When we come to such human values as honor, integrity, justice, truth, patriotism, love of family, and social values, we have not the same means of demonstration at hand. This is not to overlook our friends who would reduce all these, as psychic reactions, to terms of foot-pounds of energy, chemisms and affinities. The main difficulty with such terms, even though we get them, is that they are not uniform nor universal, nor related to scientific fact, and are therefore of doubtful value. One is not interested in discovering the number of foot-pounds of energy represented in the love of a little child. To do so would be to forfeit the love, and to miss its significance altogether. To show the scientifically undemonstrable character of the human values is not to show them unreal or illusory, it simply designates them as in another field of demonstration. Though not demonstrable scientifically, they gather and prove their values out of life and experience.

However undemonstrable human values may be from a scientific standpoint, they are yet the values that give worth and meaning to life. They are the supreme interests in spite of every effort to ignore them. The finer loyalties in the world in which we live, are forever superior to the most startling of scientific facts. The heart of a friend means more as an earthly possession than all physical wealth without it. The mere opportunity to work, to take and fill our place in the social order, for what physical consideration would a real man barter it? There are those who will betray friendship for a price, but we esteem their lot lower than that of the beasts that perish. Patriotism may be thought a mere sentiment, but to the greater number of living men and women it is more important than selfish gain, however great. Upon such loyalties, such integrities and sentiments, is the whole social structure built. It makes possible political institutions, which protect the individual in his rights and maintain for all an equal chance. Any oversight of the practical reality of these values impoverishes life and so divests it of meaning as to make it undesirable to live. The loss of life itself is felt to be a slight matter as compared to the loss of character. Ours is a time when these facts, by which we live, for when we stand ready to die, and which alone survive the passing and changing order, should be set forth in their deep significance. The progress of civilization is not measured by scientific discoveries, by the skill of artisans, or by the complexity and wealth of physical possessions, but rather by the esteem in which are held these finer values. For these are supreme, and mark the heights of human achievement. They are not supreme merely for a moral content, great as that is, but they are supreme as furnishing the only adequate ground for civilization, for society, and even for the preservation of knowledge, education, and the results of science itself. There are a host of people who gladly seize the benefits which accrue to them through the provision made by the common faith in religion and these human values, and who waste much of their energy decrying those very things upon which all the blessings of their days depend. It is quite time that men at large should come to a better good.

And, after all, there is another consideration: scientific "facts" are meaningful and real to us largely from the standpoint of value. They are themselves values of a lesser order. Scientific facts are of moment to us first because of their utility in enabling us to master our world, by adding to the usefulness and joy of living, and in the second place because of the insight they give regarding the common relations under which we live. That men should give the long hours of toil and endure such sacrifices in the interests of scientific discovery, for science has its martyrs no less surely than religion, is entirely unjustifiable, except from the standpoint of the human values to be achieved. It is forever to the honor and glory of science that along its way has shone the bright hope of human betterment. It is because of the loftiness of this ideal that men have felt the call to scientific research, sometimes from as lofty motives as came to any of the saints. The absence of such ideals from scientific research would not only impoverish the history of science but would render its future advance problematic. Without the presence of moral insight the advance of science becomes the menace of humanity. Morally untempered, it promises only universal destruction to that fragile plant which we call human life and civilization. It is needless to point out that though facts might remain after such devastation, science itself would be destroyed, if not forever, at least until the birth of a new race whose moral achievement should walk hand in hand with their scientific progress. If this be true, and who can doubt it, the dependence of science upon the final test of the human quality of its values becomes complete. Here lies, it seems to some, the true "reconciliation" between science and religion, for both must pass through the same little door of social and moral justification. A science which works and lives unmindful of human society would be a menace to the common life and welfare. Science, like religion, must be forever on trial, and must justify itself by its contribution to the common welfare. Even facts have a profound moral significance in a personal world. They possess relational value. They are powers for moral use. Religion too cannot avoid the ethical test; she must continually, with every new generation, prove her validity, not by historic authorities and past revelation, but by her ability to contribute to the social order. A science and a religion, which makes life more worth living, will abide forever, and if either science or religion, falsely so called, does not stand this test, it must pass away under the exigencies of life itself.

OVER GAVIOTA PASS

BY DALLAS LORE SHARP

For a week we had been having a spell of weather, a Pacific "high-fog" during most of the time which now had worked itself into something close to a gale and bearing, instead of rain, a drift of driving sand. "A great movement in real estate," remarked the Commander dryly as we faced the scouring storm. "But we'll run out of it by the time we cross the Pass. It won't bother the magpies anyway, and it *has* blown off the fog. If we get a clear sky on the other side of the range we ought to do some good work in the upper air."

His words thrilled me. We were out for yellow-billed magpies, one of the rarest of American birds, but what did "good work in the upper air" mean except eagles, and white-throated swifts, and—condors, possibly! What a world for the bird-lover was this California country!

I didn't believe very much in the magpies. Condors I knew were over the range, and morning after morning when the sky was clear I had searched the Santa Ynez peaks for condors, my hill-top at Casa Loma commanding miles of the craggy mountains. Nothing larger than a turkey buzzard had sailed over the heights. Yet the Commander implied condors, I was sure. Condors and yellow-billed magpies the same day! It was too much.

So it proved. We did not see a condor. The yellow-billed magpies were enough, enough to make the whole motor trip from Boston to Santa Barbara worth while. We did good work in the upper air, too, watching the flight of a golden eagle in a bent-wing nose-dive from the clouds, and the hawking of a colony of white-throated swifts. We did even better than that, for we caught the flash of a single black swift, a visitor from the Channel Islands, as he whipped about the shoulder of a mountain not far above our heads.

There is still an unseen condor in my sky. Perhaps it will be well to keep one always there. But I know where in Fish

Creek Valley to camp for him when I come into California once more. I have seen the yellow-billed magpie, however, and, unless it be the condor, California has no rarer sight to show.

By every token we should have waited for a better day. I was as eager as the Commander, but coming from New England I was not enured to California weather. The Commander was dressed for it. Just his sort of weather, he told me, reminding him of days aboard the Albatross down around the Horn, and up among the fur seal rookeries in the Arctic seas. He liked the sting of the sand. It had in it the touch and tang of spray. "But as for fit days—I have yet to see a day that wasn't fit for something out of doors."

So we were off. The storm itself was a new experience, a winged, earthy thing, as strange to me as the yellow-billed magpie. But it was terribly gritty to the teeth, and terribly gravelly to the eyes and ears. It builded dunes upon our road in front of the moving car. It seemed to dissolve and reshape in the air the whole range of the Sierras. It might blow out by noon, the Commander said. There might be no sand on the other side of the Pass. We could have waited till tomorrow. Tomorrow would doubtless be a perfect day. All the great things that never happen come off tomorrow. The sky will be full of condors tomorrow. But the Commander said we might get a little closer, possibly, to the magpies on account of the heavy wind.

And it turned out so. The wind continued unabated, but the upper air about the crags of the Pass was clear, no sand, and on the opposite side we found a different world of weather,—and a new bird world to me.

It would be untrue to say that I had motored four thousand and forty miles, from Hingham, Massachusetts, to Gaviota Pass just to see a yellow-billed magpie. But I'm fool enough for that, and I know other bird lovers who are still bigger fools, the Commander for one. He is a yellow-bill crank, and a resident of Santa Barbara where the type specimen of the yellow-bill was taken by Nuttall, in whose honor is named, *Pica Nuttalli.* The bird has never been found outside of the narrow limits between Santa Barbara and the San Joaquin Valley, and not since Nuttall's day has a specimen been taken within fifty miles of Santa Barbara.

But the Commander knew where to find them about fifty miles away. Having heard nothing of the birds since Bradford Torrey told the story of his search for them a dozen or more years before, I had expected to hear that they had vanished. Not so, the Commander told me. He would take me to a clump of willows in a little barranca on the other side of Gaviota Pass (the "Pass of the Gull") and show me a colony of six. He knew of another colony of seven at the very foot of the Pass, and eleven miles beyond the barranca he would show me a third colony of a single pair.

There ought to be one such man as the Commander in every community. The yellow-billed magpies and the people need him.

We descended the Pass to the first ranch house and searched the sycamores about the place for the seven magpies. Not a bird. This was what I expected. I didn't know the Commander very well then, and what faith and hope I may have had began to ooze.

How could it be otherwise with birds so few and sought for? I had seen the Torrey Pine farther down the California coast, a tree more locally distributed than this magpie bird, having a habitation so restricted, so confined and hazardous, that the bare existence of the ancient pine, its mere presence on the shore, strikes one almost with terror, by so narrow a margin, so small a number of specimens, has it escaped the hand of Time. But the pine is now in sanctuary. Not so the bird, though it is as rare as the Torrey Pine and just as worth saving. "Only God can make a tree" and a yellow-billed magpie.

Give this Torrey Pine, possibly the oldest of American trees, a pair of wings, with freedom to move about, and you would have a parallel to the puzzling case of this magpie. The seeds of the Torrey Pine do have wings, to be sure, and why those wings have not carried their diminished race farther afield it is hard to say. The pinioned wings of the yellow-billed magpies are still more difficult of explanation. For birds belong to a higher order than trees. They can be hungry, and frightened, and pursued, not to mention the possibility of their being curious about the other side of the mountain. Yet these magpies seem as circumscribed, as little traveled, and racially as arrested as the Torrey Pines.

This is their great peril, though earlier it may have been their safety. They have hung on, but they have not increased and spread. Known nowadays to reside constantly in these certain restricted spots, how can such rare and coveted birds have so long escaped the collector and the irresponsible gunner? I remembered that Mrs. Florence Bailey, some twenty years before my visit, had written: "In a restricted area in the San Joaquin and Sacramento valleys in California some of the yellow-billed magpies are still left; but they are so much in evidence, and afford such a tempting target that the days of the little band are probably numbered."

That inevitable fate must have overtaken them, I reasoned. The seven birds in this colony at the foot of the Pass had been wiped out! And I should find it true of the rest of the species. I had arrived too late. The Commander had seen them within the year, but how could a bare handful of birds, so large and strikingly beautiful, so unsuspecting of evil, and so pinioned by habit and penned in their rookeries—how could they hold their own for a single day with the infinite automobiles coming and going among them over this great coast road?

We moved on past the empty sycamores, up the highway, to the older, better established colony in the barranca. As we drew up by the side of the road a pair of splendid birds, as if "by compact and by composicioun" with the Commander, rose from the willows along the nearly dry stream, swung in a slow easy curve above our heads and tobogganed gracefully down to a white oak on the opposite side of the road, the sun falling gloriously upon their black and white plumage and *golden* bills!

It was a little too theatrical, too well-timed and automatic. The Commander had tricked me. This was some sort of clever play. Painted birds upon a painted landscape! The Commander ran his tongue around his dry lips as if to utter something. It was no occasion for words.

No, I was not in a trance. These were real birds, real yellow-billed magpies. And yonder was a third one out in the open field. And here in the willows and white oaks above the trickling creek were the big stick nests of the colony. We watched, and were able to count four different birds all told; but from their quiet behavior and from the sturdy appearance of the nests we guessed that the other two, and possibly more, were within the big roofed houses brooding.

The Commander wet his lips several times, a sign, I came to understand with longer acquaintance, of inward and profound satisfaction. It was a sight to travel far to see, the birds, I mean. But both the birds and the setting seemed too accidental, and made a picture which had something in it that was less than real. Why were they at this spot only and not at a hundred other as likely places along the road? Back a mile or two was a colony of seven, so the Commander said (we found them on our return); ahead, eleven miles from where we now stood, was a colony of two. Except for these three particular localities there was nowhere else in the immediate countryside where the magpies were known to be.

These three situations had no single feature in common as marking them for magpies. One had willows and oaks and a little water; another sycamores and oaks, but no water; the third a few scattered oaks down the steep slope of a rocky pasture. All three were close against the highway, which should have disqualified them, one would think, for the fixed abodes of such aloof and showy creatures.

I asked the Commander to take me on to the third colony, eleven miles ahead. This was an April day. The Commander had not visited these two particular birds since August of the summer before, but off he started. I marked the speedometer. At exactly eleven miles by the dial we drew up again by the side of the road on a slight curve, a small thing by which to mark a magpie colony in a road that was a constant curve; but there below us, tossing over the dried chips of cow manure and looking for insects underneath, was a magpie with a yellow bill.

This was strange indeed. Not to have seen this magpie since August, and in April to pause here on the highway and find him within a hundred yards of where he was last seen, gave me a new glimpse into bird life, revealing a pair of magnificent wild wings that were used hardly more than those of domestic fowls.

Some very new and interesting facts about the ways of birds, especially their methodical habits, their timed going and coming both at home and on their long migrations, are being brought to light through the work of the bird-banders. The stars in their courses seem not more constant than the winging wayward birds in theirs. But what other bird seems quite so fixed, quite so nearly planted as this yellow-billed magpie?

We lingered for some time above the steep hillside hoping to see the magpie's mate. If he had a mate, and the Commander was sure he had, then she may have been brooding, though we looked in vain from the roadside for the nest.

It was difficult to believe that the showy creature below us against the green was not pinioned or tethered, he seemed so bound to the spot. His black and white wings, gleaming bronzy-blue in the sunshine, were as free, however, as the lively wind. Every time a sharp gust caught the bird it filled his unreefed tail and veered him into the breeze facing us, his golden bill as big as a toucan's to our greedy eyes.

He was not rooted like the oaks; but his homing instinct, striking quite as deep into the hillside, held him as close as a marmot to its den. Here in August, here in April, here, the Commander assured me, he could be found every day in the round year. Did he never move out of sight from this bend in the road? Not over the next hill even, half a mile away?

A fresher green than old Chaucer sang (because it follows a longer drouth) poured over the slope and spread out through the valley. The scattered live-oaks were in tender leaf and blossom, the little tits already weaving the delicate flowers into their hanging nests. Upon this spring glamour fell the incredible gold of the California sun. But it was not so pure a gold as the bill of the magpie. The whole scene was but a background and a frame for the elegant bird. So clean-cut, so well set-up, so severely yet so richly dressed a bird I never saw. And then his bill of gold! There was a touch of the prince about him, something of the grand style. The band-master way he tossed those dried chips over seemed to turn the very manure into music.

One wide round disk was too much for him to tip. He came smartly up to it, with the air and appearance of a gentleman in evening dress, put his gold bill under the edge, and tossed his head carelessly. The flat round thing wheeled half about on its rim and flopped back into the grass. The bird was moving on before the disk had hit the ground, giving not so much as a second glance at it, as if subsistence for him was no affair of shirt-sleeves. He was not one to grub for a living, not with his bill!

Tastes, training, his family's past, and its present exclusive position, were clearly manifest to our excited imaginations in this fine gesture. As the bird walked away proud, erect, with more than a touch of hauteur in his carriage, I thought I had never seen anything more self-contained and aristocratic.

Perhaps his vanishing country and shrinking numbers are partly due to something indifferent and unadaptable in his nature. He is without curiosity, is completely self-centered, lacking evidently in ordinary interest in people and places, at least in places, so lacking as never to travel a day's journey from home. As human tribes of like temper are sure to run out from isolation and inbreeding, may it not be so with this ancient family of the yellow-billed magpies?

Too fanciful, I know. Yet what other bird with flying wings can I name that spends his life actually about his roof-tree? Or carries around with him this air of absolute self-sufficiency? Compare him with the crow or the quail, two very deeply rooted birds, and year-round residents over most of their range: they wander freely about the general neighborhood, though driven to travel, possibly, by harder weather and greater scarcity of food. What a mixer by comparison is the robin, and what a multiplier of his kind! And thinking of wings, compare the use the magpie makes of his with the sea-miles covered annually by the wandering-tattler in his flight.

I have just come from the beach under the Rincon where I sat watching a pair of these half mythical tattlers. They had only yesterday reached Santa Barbara over the Pacific by way of the Hawaiian Islands from no one knows where. If report be true they are outward bound for the coasts of Siberia, touching California here for just a day or two of rest. They will leave Santa Barbara across the ocean for the Kurile Islands; thence, eastward once more, calling along the Aleutians, will come to port for a short summer on some boggy bank of the Yukon. If the wandering-tattler is an infrequent visitor, and if his family is few, how could it be different with such restless wings? The hazards of travel for ten months a year among the continents, and the islands in between, are more than the hardiest stock can stand.

The extremes of temperament and wings meet in these two birds: the tattler fore-and-aft rigged, semi-webbed of foot, with a rakish wing, loving the surf and forever at sea; the magpie with more rudder than sail, so much more tail than wing that he must almost unship his tail before taking to the air. One who has a tail that stays behind like the magpie's must needs stay behind with his tail.

Tail or temper (the two are very much one in the magpie) it seems inexplicable that any bird who is free to use his wings should stay so like some pauper prince to his lodge, or like a serf to a bit of soil. He moves from one side of the road to the other, from the oaks to the willows. But the trees also wave their arms and move almost as far. Mother Goose, to have her children safe abroad, would keep them safe at home, a theory and practice prevailing among the yellow-billed magpies, but which does not seem especially successful. The birds are prolific, clutches of seven eggs being not uncommon among them; they are good nest builders, too, thatching their rough, strong houses, and entering them from a doorway on the side. They are faithful parents and mates, apparently. Yet from season to season there is no increase in their numbers, but rather a slow falling off, as if the family had either physically run out, or become imaginatively and socially unfit.

How came this yellow-billed family of magpies here in this narrow land between the Sierras and the sea, and *nowhere* else? How came their bills to be yellow when all other magpies, a great and flourishing family, have bills that are black?

Some ornithologists say the yellow-billed birds were the progenitors here of the whole magpie race; that once, perhaps a nest of young ones, through some freak of fortune, came a little larger than usual and came with black instead of yellow bills; and that these, along with greater size and different color, were also born with different, more adventurous spirits, and going over their Sierras eastward, discovered a larger and more difficult country, and conquered it, and so grew into it great as a race and strong. Meanwhile the parent birds with their golden bills stayed where we still find them, rootbound like certain plants, or more like certain residual persons, slowly dwindling to a vanishing point in their outlived land.

As I sat watching the four proud birds in the barranca I shivered to think how easily a soulless collector, with no warden to stay him, could take every one of the colony, and wipe out in a day's shooting the last beautiful bird of this golden-billed race. I would build a high wall about them if I could, or lay out a different highway along the coast, avoiding Gaviota Pass; only none of these things would stop the desire to kill and collect. Other bird races less striking to the eye and more remote than the yellow-billed magpies have hurried away from the gun never again to return. We must take the gun away, and take the desire to kill away, and give every man eyes to see and joy in seeing.

We started back toward the Pass and Santa Barbara, the Commander using his tongue frequently—to moisten his lips. He was deeply satisfied. It had turned out as he had promised, and better. The high wind had greatly favored us, keeping the birds close to the ground, and when they did fly compelling them to break out every stitch of their canvas, and so displaying them as a boastful exhibitor. I accused the Commander with having prearranged all this with the wind, but he only wet his lips and drove along.

The birds have a leisurely, rather uncertain, purposeless flight, as if one side of the road were as fit as the other, and the reasons for crossing exactly as cogent as the reasons for not crossing, and wings were an accident anyway. A little smaller than their black-billed cousins, they differ in the field only in respect to their yellow bills. Head and breast are black, the jet swinging in more than half a perfect circle from shoulder to shoulder against the snow-white of belly and sides. The ten-inch tail, with its graduated feathers, is white. The wings at rest are black, but spread they show that nine primaries are only edged with black, the rest of the feather white, the color scheme a kind of picket-pattern, which seen in flight, balanced by two half-moons of white upon the bird's back, fairly dazzle the eye, the whole flourish more like one of the old Spencerian pen pictures than the planned shape and arrangement by Nature of a living form.

The zebra is not more consciously marked, though he is supposed to be striped for protection, his colors laid on by the old jungle painter who loved and laughed while he worked. It was a sign painter who did the magpie, and if he had plotted the destruction of the bird he could hardly have made him a more conspicuous mark. And then his bill of gold!

But California can yet forever keep this remaining gold. She once had dust as yellow as this, which the forty-niner carried away and scattered, leaving her none the poorer, however. There is small distinction in gold. Arizona and Nevada mine gold, and all the states make gold, and pour it back into the lap of California. Gold is common. But not the gold of California sunshine and magpies. Neither Arizona nor Nevada produce these birds with golden bills, and once they are scattered they will not come back as comes the forty-niner's gold. Let these few birds perish and neither California nor the whole round world shall see them more. But the willows would weep in the little barranca over Gaviota Pass.

What is the glory of California? Not her cities. John Muir's first question on landing in San Francisco was (according to legend), "What is the quickest way out of this town?" Los Angeles seems almost as big and terrible as Chicago. Not her big cities but her big trees—these are her glory, as the Sierras and the desert are her grandeur. These are her ancient past, her present and her future—these and the Torrey Pines, and the great condors and the handful of magpies with the yellow bills.

The first rush into California was into her ravines for gold. The second rush was into her valleys for orange lands. The third rush was into her deep sands with drill and pump for oil. The gold is gone. The fruit lands are taken. The oil begins to fail. But not the coming of those who would be warmed by the golden sun, and healed by the sovereign air, and fed by the beauty of the Sierras, and freed among the purple spaces of the Mojave from narrow streets and trampling things. These keep coming in ever increasing numbers—more than the forty-niners, more than the homesteaders, more than the drillers for the oil, seeking a better country for body and soul.

Slow to restore her ancient missions, swift to dig her irrigation ditches, California, like her sister states, only dimly apprehends the spiritual values, that they are the eternal values —the cloudy head of the redwood, not the square feet of lumber in its massive bole. California has a sanctuary for the Torrey Pines. One may not pick up so much as a fallen needle under these bent and weary trees. Unfit for the mill, bowed down and dwarfed by their forgotten years, these pines are pure spirit, and their leaves are for the healing of the nation.

So are the condors and the magpies ministering spirits. Arise O, Sun-kissed Sister of the States! Ascend the high places in your Sierras and make every peak a safe perch for the condor! Go over Gaviota Pass and build a sanctuary for the magpies, a holy place of that barranca among whose willows the last of the yellow-billed birds still make their nests!

A thousand automobiles pass that barranca without a stop. But I saw one from Massachusetts draw up by the roadside, and one from New York, and one from Virginia. Tomorrow more shall stop, and more and more. For if the oil fails, the sunshine shall never fail. Fires may blacken their gray-green flanks, but the high-fog shall come and cover them with their chaparral cloaks again. And the Mojave shall burn and blossom with supernal dusks and dawns. And from the level West and peopled East, from snows and bitter winds, a constant caravan shall come to see the magpies with the golden bills, the seasons with the golden months, the orchards with the golden fruit, the daily miracle of the desert twilight, the hills, the sea, the ancient cypress trees and Torrey Pines. And some of them, standing uncovered where the Big Trees stand, shall for the first time be aware of God.

THE RELATION OF MODERN SCIENCE TO PHILOSOPHY

BY J. E. TURNER

The increasingly intimate contact between science and philosophy which, whether we welcome it or not, is one of the most obvious features of current thought, raises afresh the problem of their true relations to one another. Will their mutual approach result in a collision or a condominium?

It is highly instructive to observe, in the first place, that the recent development has arisen in a perfectly natural way out of the expansive activity of science itself. For science is at once the movement, and the content, of the life of mind; and here, as always, life pursues no single path but follows that tortuous course which seems so often to be only a return upon itself. At the present moment modern thought is beginning to feel the burden of the enormous mass of facts that have been accumulated by the feverish activity of scientific investigation; it is like a suddenly enriched multi-millionaire who is at last forced to consider the social implications of his possessions. This illustration, indeed, may profitably be carried still further. For just as the amassing of enormous fortunes has raised economic issues so vital as to necessitate the control of the state, so this wealth of scientific principles has begun to demand its own sound bases and infallible justification. But economic problems, again, involve still more fundamental questions; are we, namely, to regard state regulation as external or—more truly—internal? Are state and financier necessarily hostile or not? We are simply asking the same thing in another way when we seek the rationale of the entrance of philosophy into the domain of science. Is this an impertinent intrusion or an inevitable consequence of the advance of mind?

Our answer obviously depends on the meaning of our terms. Philosophy is very old—modern science very new; and the resentfully suspicious attitude of youth towards age is natural and familiar. If philosophy is only the study of formal abstractions, while science is the investigation of concrete facts, it is plain that they have nothing in common. Now philosophy certainly has its peculiar technicalities; but so, equally, has every science. These are always indispensable, since they are simply the instruments requisite for the definite and precise expression of knowledge; and until knowledge can be thus expressed, it falls short of its ideal. It is here that the antiquity of philosophic speculation becomes a severe handicap, since its technique is the fruit of pre-scientific thought. This, however, is balanced by the youth—perhaps, even, the infancy—of science, which, with characteristic impetuosity, has paid little heed to the purely logical aspects of its own principles. For this, indeed, there has hitherto been little occasion, since the very rapidity of discovery both justified itself and left no time for more formal justification.

But this condition of affairs could not last. I have already alluded to the inevitable consequences of the mere amassing of results; and with these must be associated their profound influence upon the emotional outlook and moral ideals of humanity—including in the end, of course, scientists themselves. Ultimately two alternative courses presented themselves; earlier beliefs must either be discarded, or be placed upon a basis which accorded with the body of new knowledge. Thus there arose a dual attempt to discover a common footing; on the one hand a fresh criticism from within of established principles, and on the other repeated efforts to harmonize science with the older systems of philosophy. Of these latter the best known are the epiphenomenal theories of mind advocated by Huxley and his contemporaries, Spencer's dualism between the knowable and the unknowable, and the sensationalism of Mach and Pearson, together with the more widely spread agnosticism of students in general.

The moral of all this should be obvious:—the impossibility of absolutely excluding philosophy from the realm of science, as hopeless an ideal as the total cessation of state control of financial affairs. The truth is that philosophic speculation on the one hand, and scientific investigation on the other, are equally natural activities of the human mind. If the first springs from wonder, its fellow originates in curiosity; and the more curiosity is satisfied the more is our wonder increased. To seek to expel philosophy as an intruder, therefore, is to stultify an innate impulse of human nature; and the only remaining course is to determine its character and so delimit its sphere of influence.

I shall begin by noting some current views of philosophy which, while sufficiently correct so far as they go, are still seriously inadequate. It is not enough, for instance, to say that philosophy begins where science leaves off; for as I have already implied, science never does leave off; its potentialities, on the contrary, are infinite. It is true that a philosopher may put forward a suggestive theory to meet some unsolved problem; but so may the scientist—and generally a much sounder theory. Nor again is it the distinctive task of philosophy to co-ordinate the different sciences. Rather do these determine their own mutual orientation as they collectively expand; physical chemistry and bio-chemistry, namely, arose not from philosophy but simply from the common advance of chemistry and physics. This is equally true of the recent search for the logical basis of mathematical postulates; while the theory of relativity, taken purely in itself, is no more philosophic than is the atomic theory or the quantum theory. It may be argued that the principle of relativity cannot be considered "purely in itself," or that it fundamentally revolutionizes all our ideas about the universe. But this again obviously applies to every great scientific discovery; so that to emphasize the specifically philosophic character of Einstein's results, as has so frequently been done recently, is simply to distort the whole problem; and finally, it is certainly not the task of the philosopher to employ scientifie truths—often selected for this particular purpose—merely to support some special system and nothing further.

Disregarding therefore all such defective interpretations of the situation, we find our first clue to the real interrelation between science and philosophy in the fact that both are equally natural and ineradicable tendencies of the human intellect. But if this is the case, it will at once be objected, why is scientific progress so completely an affair of the last hundred years? The answer is obvious. Science itself is not modern, but as old as thought. It arose when some semi-human genius discovered the most efficient way to make his fire, to poison his arrow-tips, and to stabilize his canoe—a problem just as baffling to the savage mind as is now the invention of a reliable helicopter. It is, then, only "modern" science that is really modern—that is, experimental, co-ordinated and exact science. The conditions governing its rapid advance are by no means purely intellectual but, in a larger measure than is generally recognized, economic and social; and it must not be forgotten that just as "philosophy" carries us back to the Academy, so "magnetism" is closely associated with Asia Minor and "electron" with amber.

Science and philosophy, therefore, are twin daughters of human thought. "Scratch a Russian," says a familiar maxim, "and you find a Tartar;" and quite similarly, "scratch a conviction and you find a philosophy." For every reflective person—which means, indeed, almost every human being—has a more or less indefinitely outlined scheme of ideas and values which determine his general attitude to the world, and into which he is constantly endeavoring to fit every new experience. Ordinarily, this vague scheme subsists in the subconscious—or even, it may be, the unconscious—mind; but whenever any of these firmly held convictions are challenged we immediately and instinctively advance the best arguments at our disposal in their defence. To do this is simply to state one's own philosophy; while not to do so is to take refuge in the worst form of dogmatism. And this is just as true of the pothouse politician as of the statesman—and the scientist. It is thus impossible for the latter to eschew philosophy; he is, naturally and instinctively, a philosopher *malgré lui*. His only alternatives are either to cherish an incomplete and therefore faulty philosophy, or to contribute as best he may towards a truer one. This does not mean, however, the acceptance of any of the great historic systems just as it stands, for that is only dogmatism in a more refined form. It must nevertheless be recognized that these systems, despite their imperfections, are the products of long and patient labors on the part of supremely able intellects; while to insist on the many discredited philosophic theories of the past is to lay science itself open to too perfectly obvious a *tu quoque*.

What then is the essential relation between philosophy, on the one hand, and science, on the other? If they are, as I have just maintained, inseparably united, how are they to be distinguished? Here we must recall that "indefinitely outlined scheme of ideas and values" which has so profound an influence on each of us. Into this scheme we try "to fit every new experience"; and this, in other words, means that the mind incessantly tends to construct, from the endlessly diversified materials at its disposal, a single unified totality of facts, beliefs, theories and principles. Its constant ideal is a totality that is completely harmonious; but, quite obviously, this never is, and indeed never can be, fully realized; it is on the contrary eternally defeated, first, by internal contradictions and discrepancies and, second, by continual modifications arising from the expansion of experience itself. Each of us must remain content with what is, at its best, a fragmentary and faulty system which nevertheless, despite all its defects, is absolutely indispensable; and it is this system which forms the "philosophy" of the average man.

Each of the great established philosophies, on the other hand, is an attempt to formulate a coherent and logical scheme which shall express the whole of human experience, on the one hand, and comprise the entire universe, which is the object of that experience, on the other. Nor is it paradoxical to say that every great philosophy is a *scientific* attempt to do this—

scientific, that is, in its spirit and method—in its passion for accuracy, comprehensiveness and rationality. It is, in short, the endeavor to perceive clearly, and to express definitely, the nature of the universe in its entirety; often, we must admit, over-ambitious and over-confident, and exhibiting also the painful limitations of the individual thinker's temperament and standpoint, and yet none the less an insuppressible activity of the human intellect.

A still more serious defect, however, lies in the inevitable reduction of the various problems to too simple a form—in other words, in the underestimation of the *complexity* of the universe, as manifested subjectively in experience and objectively in the natural world. It is obvious that no matter how clear and comprehensive our synoptic survey of existence may be, its value must depend, ultimately, on the degree in which it recognizes and truly interprets all the diversified phenomena of reality in their full detail. Hence the imperative necessity, not only to summarize and synthesize our knowledge, but also to analyze our subject-matter to the furthest possible limit; and it is this analytical investigation that constitutes the first form of distinctively scientific activity—the discovery and interrelating of detailed facts and processes. But the minuteness and delicacy of these processes, and the profound intricacy of their relations, had never been suspected until they were revealed by modern science.

Analysis, however, always forms the merely initial task of science; for every hypothesis, and still more every theory, is an attempt to summarize the results of analysis into some more or less comprehensive principle—in other words to adopt a synoptic standpoint which shall include as wide a range as possible; and how far-reaching this may become is patent in many current scientific theories. But this is obviously to contribute in some degree not merely to the science, but also to the philosophy, of the subject; for it is the endeavor not only to summarize and tabulate, but equally to interpret and rationalize, the facts at our disposal. In this way the two main tendencies of all thought—the analytic spirit of science and the synthetic ideal of philosophy—approach each other more and more closely. We are thus enabled to perceive some of the main characteristics of the future course of scientific investigation. In the first place, systematic analysis demands the highest possible definiteness and conciseness in the expression of its results; and this is most successfully attained in mathematics, which provides extremely powerful analytical instruments together with the means of precise formulation. Hence arises the marked increase in the applicability of mathematical methods and formulae to every branch of current inquiry—to vast fields of physics and chemistry, to the explanation of sex development, and to the correlation of psychological phenomena. All this is simply the inevitable outcome of the fast-growing range and efficiency of analytic observation—to the rapid multiplication of detailed facts and the necessity for their accurate co-ordination. Precisely the same is true of the increasing importance of the purely physical aspects of chemistry, the biochemical features of vital processes, and the neurological bases of psychical changes. Without in the least degree detracting from the independence of biology, psychology and the allied concrete sciences, chemistry, physics and mathematics must inevitably play an increasingly valuable part in their elucidation.

But on the other hand, this rapid development of mathematical and physical methods of investigation carries with it an extremely important consequence. For the initial stages of these methods are plainly analytical, although their later forms must become synthetic. Now the farther pure analysis is carried, the more must it tend to become merely descriptive and formal, rather than explanatory and constructive; and while it is absolutely indispensable to modern knowledge, yet at the same time it involves certain tendencies which, if pursued too far and too exclusively, defeat the very purpose of knowledge and vitiate its essential nature. In this respect it resembles the insistence on the merely legal technicalities of some constitutional problem—technicalities which must be taken into account but which can never fully express the real issue. Hence has arisen the recent vigorous criticism of causation and teleology—of purpose, end or aim, as concepts that are valid for knowledge—together with the demand that science should restrict itself to pure description—to the accurate observation of phenomena and the correct presentment of their fixed sequences and inter-connections. This familiar standpoint has been amply confirmed by the universal applicability of the principle of relativity, which at first sight appears to enable us to dispense entirely with the appeal to causation. This, however, is simply the logical consequence of the perfection of our mathematical instruments. The mathematician, purely as such, has no need of causation at all; for his own specific purposes it need not exist, any more than personal motives need be considered by a constitutional lawyer; and both these attitudes alike are perfectly legitimate, so long as we adhere to that special point of view which must be adopted by all analytical inquiry if it is to be fully successful.

But on the other hand this "special point of view" is obviously extremely narrow and indeed, in a certain sense, artificial. For invariable sequence and permanent interconnection must not only be precisely expressed and inclusively formulated, but must further be explained. Permanence and invariability cannot be taken for granted any more than legality. They are all real attributes of the natural and social universe; they did not spring from nowhere, nor do they exist merely "in the air," much less in the subjective mind of the scientist as concepts which he cannot dispense with, but which possess no objective validity. The mathematician certainly does not require these attributes; but the final issue does not rest with him, any more than a constitutional issue can be exhaustively dealt with by the legal expert. He can deal only with the initial stages of inquiry so as to present them, lucidly and systematically, for further consideration, like a barrister submitting his case to a court of law; and just as the real basis of legal rights must be sought in national history and social relations, so the fixity and order of phenomena are manifestations of the nature of the real universe.

As soon therefore as science passes beyond its initial (and always indispensable) analytical stages it must supplement analysis by a synthesis which employs the materials, placed at its disposal by that analysis itself, in exactly the same way—to pursue my illustration—as a judge utilizes the principles and precedents laid before him by counsel. This further advance means that science deals not only with formal analytic *schemata* but increasingly with concrete systems; and these systems, if they are to be fully comprehended, must be interpreted in terms of causation, purpose and end, as well as in terms of mere sequence and interrelation. If knowledge, in other words, is to be complete it must employ both synthesis and analysis—description and explanation—calculation and causation—alike and equally. But the farther it pursues this course the more must science merge itself with philosophy; and this for two vitally important reasons—one depending on the nature of analysis and the other on that of synthesis.

For the increasing applicability of mathematics, to which I have already alluded, obviously implies that mathematical principles are capable of dealing with the widest possible ranges of phenomena and experience; in physics, they are of universal validity. But this at once raises the problem of the justification of these principles; once again we cannot be content to take them for granted, or to assume that they validate themselves just as they stand, or merely because they are successful in actual practice. Hence the rise of the interesting recent inquiries into the logical character and basis of even the most elementary mathematical laws; and once we recognize that these laws are expressions of certain characteristics of the entire universe it becomes easy to appreciate the extreme difficulty of the investigation of what are, at first sight, simple and self-evident truths.

So much, then, for analysis; and science, as we have already seen, must advance from analysis to synthesis. But, from the very nature of the case, science itself can never achieve that finally complete synthesis which knowledge always demands. For science is inseparably united to specialization and analysis. It can succeed only to the degree in which it demarcates the entire field of investigation into separate and distinct subdivisions, each employing characteristic methods which are comparatively valueless outside its own peculiar province, and each taking very much for granted on the unquestioned authority of its allies—as physics has utilized mathematics, without suspecting the necessity for establishing its validity. The further implications of every separate science, as also the profounder implications of all science in its entirety, still remain therefore to be considered. But science, from its very nature, cannot itself undertake this task, which must thus fall within the purview of the philosophy of the future.

THE SOUL'S GEOMETRY

CHARLES WHARTON STARK

Christ's hands upon the cross are nailed apart
In a straight line outstretching left and right;
And the divine impulsions of his heart,
Pointing asunder, never can unite.

So the mind reasons. But a bolder sense
Tells us the straight line bends at last in space.
Those arms, though seeming fixed in impotence,
Hold us and all things in their wide embrace.

ME AND THE MOVIES

BY TROWBRIDGE LARNED

The Moving Picture blights, and, having blit,
Moves on: nor all the Skill was in your Skit
Shall lure it back to put in half your lines,
Nor all your Jeers restore a Reel of it.
—Omar, after seeing the Screen version of his Verses.

It was Lamb (if we may refer to one now so obsolete) who divided the human species into two distinct races: those who borrow and those who lend—ascribing to those who borrow, whom he designated as the *great race,* an infinite superiority "discernible in their figure, port, and a certain instinctive sovereignty."

This category now needs amendment. The human species, it would appear, is to-day made up of those who are moved by the Movies and those who are not—the fans of course preponderating. In acknowledging myself as of the insignificant minority, I would hasten to disavow any feeling of pride so often too evident in persons whose tastes set them apart from the great majority of their fellows. I am acquainted with many such: prigs who profess a disdain for the theatre—all unconscious it is but their ignorance of twentieth century drama; fogies (there really *are* such) who eschew contemporary fiction—actually imagining this a proof of intellect; dodos who declaim about the dustiest of the classics—as if we ourselves were not incubating our own immortals, and tolerably good immortals at that!

No, we have some bananas to-day. Plucked too green, it may be; occasionally over-ripe, or even rotten. Nevertheless, *some* bananas!

Humble indeed am I in avowing my inability to set up a reflex motion when confronted with the Movies. It is as if I were subjected to a test for normalcy. The great director taps me, so to speak, upon my knee with a hammer; and when my reflex does not respond, I have that guiltiest of feelings celebrated by our Mr. Briggs. At times the great director has tapped my knee with two or three hammers—or was it twenty? The result is just the same. My vibrations are not what they ought to be; I cannot play in the backyard with the other norms. It must be that I have no humanity.

Yet I like common things, if you know what I mean: plain fare, the circus, an amateur baseball game, the nude in art. I have been known to laugh immoderately at a comic strip—Ketten's of course. And I do not understand T. S. Eliot.

It does seem as if some day I might be a norm.

Oddly enough, my natural instinct urges me to the movies. That is one reason which leads me to hope I may not be so peculiar, after all. It is an instinct I share with thousands of my fellows—including Frenchmen and New Englanders, from whom indeed I derive the instinct to be entertained inexpensively.

There! I have said, at the risk of social ostracism, the thing no real New Yorker will admit—pretending as he does that his impulse is toward a greater art; because don't you know, as some eminent novelists have so well and truly said, Shakespeare were he living to-day would unquestionably—but why harp upon the obvious?

What depresses me most is that the movies—in addition to educating us all, yet exacting no effort on our own part, to say nothing of the blessed surcease from suffering which humanity undergoes when it can sit with its mouth and eyes open, without conscious cerebration; what I mind most of all is that the movies make talk, and I cannot do my share in promoting the social gaiety. One need not go so far as to say that the movies have restored the Lost Art of Conversation among a people hitherto given over to gossip and personalities; yet one cannot fail to observe that subjects for brilliant small talk are, more and more, less concerned with the motor car and more and more with screen and custard pie. Yes, in a time given to too much meditation with the radio, the movies do make talk; and never to have seen Mary Pickford argues an inexperience of life that no one eligible to afternoon teas cares to confess.

Thus am I coming to be a recluse. I hear the happy laughter of others, and cannot join in their hilarity. The scholarly directors of the Silver Screen have ravished all literature of all nations and all ages, and I sit like a skeleton in armor.

For me, alas! the movies have achieved but two things: the pictorial and the acrobatic. A troop of horsemen riding against the sky; the absurd adventures of a solemn-faced clown pursued by murderous Arabs: these things have thrilled and amused me. These, and the tricks of the cartoonists. With the deep emotions it is another matter. I can but say with Cordelia:

Unhappy that I am, I cannot heave my heart into my mouth!

Yet I liked the D'Artagnan of Douglas Fairbanks—liked it so much that I was lured to "Robin Hood." Lured to, but not allured by it. However, it was the means of making me more human—more equipped to share the emotions of the great majority. The truth is, I write for a living; and we who write for a living must strive to please. We must even go to the movies, if only to see how the other nine-tenths look at life. Ah, yes!

We are no other than a Movie row—
Of Shadow-fans that come, and gape, and go
Round with the Lantern by that One upheld
Who knows it ALL—unless He doesn't know.

Now, I was brought up on "Robin Hood"; memorized with my nurse's aid, at the impressionable age of five, the ballad of the noble outlaw—and I have not outgrown the glamor. Hence, certain aspects of the spectacle saddened me. What a forest, and what foresters! Douglas performed—not feats of derring-do, but miracles of it-can't-be-done. So, having seen, I sat me down and wrote:

The train without the castle drew,
And Douglas paused to bid adieu.
Alack! it was the only pause:
It contravened the Movie Laws.

Not so bad, eh? *Almost* like Sir Walter's "Marmion."

Then I asked myself: Whom are you writing this *for?* The one-tenth or the nine-tenths? Well, if it were to be printed, it must be for the nine-tenths. So many periodicals run motion picture departments, and the feelings of fans must be reckoned with. Well, then?

"The train without the castle drew."

Consider that a moment. How many would perceive the line was really Scott's? No one, perhaps? Not even the children? Then the point would be missed; and in that case what meaning *would* the line convey? Frankly, not much.

In the first place: "The train." Even rural fans would know that trains were not run in the Middle Ages. Why, *they were not even invented!*

Then: "The train without the castle." I could hear my audience asking: "Why *without* the castle? Why *shouldn't* it draw—or move, if that is the meaning—*without* the castle? How on earth could it draw, or move, *with* the castle?"

True enough! I killed the line without a qualm.

This of course left the second line nothing to lean on; nor the third and fourth. Let me tell you, a verse writer has his trials. Anyway, the second couplet was too sweeping, and might give offense. I had to begin abruptly:

Speed up, speed up! More speed, more speed! . . .
The knight now vaults upon his steed;
But sooth to say we scarce descry
Whether 'tis Robin or Sir Guy.
Ha, now he has him! . . . Who has whom? . . .
He's down! Who's down? . . . Quick, quick! A room,
A moat, a throne, a stair, a cell,
A wall, a forest—piled pell-mell—
Mixed up with lances, arms and legs,
Pork chops and pincers, casques and kegs;
And through it all *one* head a-bobbin';
Puck? Peter Pan? . . . Why, no—it's Robin!
It is, it was. He's gone again!
And where he stood three score lie slain.

So far it would probably pass. Elated, I wrote:

It was, it is . . . At least I think . . .
"Think nawthin'. 'S Little Jawn, you gink!"
Ah, Little John! . . . Why, no—it's Will . . .
I say, who called the Forest *still?*
And all that whirling, crazy mob?
"Them's outlaws. Can't you read, you slob?"

Again I considered. This would never go. Why, it might be libel! Or *lèse movieplay,* or something. *Do* I want to dine again? I do. Let it be deleted—all but the third and fourth lines.

O ye who thumb the ancient pages,
And sought to see the Middle Ages . . .
Well, Doug, they say, *is* middle-aged,
Yet scarce the Robin that I paged.

Now the climax:

Agile as Ariel, acrobatic . . .
If for one second he were static;
If he but looked before he leaped,
If he but sowed before he reaped;
If he but thought before he acted:

My wits—

No, no! Puck was a comic paper, and Peter Pan was Maude Adams—or maybe Barrie. But Ariel! Why are you always dragging in these classical allusions? Has not Miss Harriet Monroe told you, plainly enough, that "Poetry" never accepts a poem in which such names as Sappho and Babylon occur? She has. Then why take a chance on Ariel? Better chuck him. . . . Well, he's chucked. So also the ensuing lines, though I do hate to keep cutting it down. . . . O, well, let it go at that, with just a final couplet for a fillip:

The Movies move—we all agree.
Alas, that they do not move me!

Man alive! *Will* you never learn *which* side of your bread—?

Yes, yes—to be sure! I'll make it read (and sign it with only my initials):

These Movies move—we all agree.
Alas, they move too quick for me!

I did. . . . Why, yes, it *was*—in "Life."
So now I am a Norm—or almost.

MEMORIA MEMORAT

JOSEPHINE JOHNSON

Oh happy mourners—who have cause to mourn!
You could not lose unless you once possessed,
Nor were bereaved unless you first were blest.
Heavy your sorrow, yet it can be borne.

But what shall comfort us who have not known,
Nor ever shall, that joy with which you part?
Who bear the anguish of a loveless heart,
The tearless grief of those who walk alone!

ROBERT ELSMERE AND THOMAS HILL GREEN

BY GEORGIA E. HARKNESS
Elmira College

When any great issue invades the sphere of human interests and finds a place on the front page of the newspaper, it is not long before somebody writes a novel about it. The Fundamentalist-Modernist controversy is no exception, for the story of a human soul struggling between two types of religious loyalty affords an argument more convincing than pulpit oratory. It is not my purpose to try to pass judgment on any current work in this field, but rather to call attention to a "best-seller" of a generation ago—to a novel which has a theme of deep significance for present-day theology and philosophy.

Robert Elsmere, written by Mrs. Humphrey Ward in 1888, called forth much controversy. Its theology created such a furor that the critics forgot to discuss its literary merits; and if not the most popular novel of the year, it was at least the most widely read. Its author was branded by many as a heretic and hailed by a few as the prophet of a new age. Its present-day significance lies in the fact that it portrays in a striking fashion the struggle between dogmatic conservatism and intellectual honesty in the life of a virile, consecrated young minister.

The book is semi-historical and has considerable philosophical interest; for the Oxford professor who moulds the thinking of the hero, though called Professor Grey, is in reality T. H. Green. It seems, at first glance, almost incongruous that this quiet, unromantic English philosopher should figure as a leading character in a novel; but it is a high tribute to Green's contemporary influence that Mrs. Ward should have attempted by this means to let the world know him more intimately. The book is dedicated to his memory.

The theme of the novel can be briefly outlined. Robert Elsmere, a fine young fellow of high ideals and much intellectual acumen, in studying philosophy at Oxford falls under the influence of Professor Grey. He is deeply impressed, not only by the intellectual insight of his teacher, but by his moral earnestness and religious intensity. Grey is commonly regarded as a heretic because of his insistence upon the rationality of religion and his lack of conformity to the Established Church; but his effect upon Elsmere, far from destroying his religious faith, is to arouse in him a depth of religious enthusiasm which impels him to enter the ministry of the Anglican Church. Elsmere, after laboring successfully in his parish for several years, becomes convinced that there are elements in the theology of his church which he cannot accept with intellectual honesty. He is torn between the desire to continue to serve in the church which he loves, and the feeling that he ought not to remain in its fold when he cannot wholly assent to its doctrine. The situation is complicated by the attitude of his wife, an orthodox Christian to whom his views seem the rankest heresy. Finally, in response to what he regards as his duty, he severs connection with his church and gives the rest of his life to the establishment of a great settlement house called "The New Brotherhood of Christ." This is built upon a thoroughly spiritual foundation and radiates a far-reaching gospel of service. But its only creed is "This do in remembrance of Me."

The book presents an excellent picture of the institutional church in its infancy; for while not so called, the "New Brotherhood of Christ" has all the essential features of the modern institutional church, with its ministry to the spiritual, physical, social, and intellectual needs of men. The conservatives of that time, in words not unlike more recent epithets, taunted Elsmere with turning away from the pure gospel to "dirt, drains and Darwinism." This part of the story strikes one as a bit suggestive of *"The Servant in the House,"* though written long before the latter. When it is remembered that the social gospel, in 1888, had not yet made much headway in either settlements or churches, Mrs. Ward's portrayal takes on the nature of a prophecy.

The dilemma of duty which Elsmere faces regarding his relation to the church presents a challenging parallel to a crucial modern problem. "Shall I preach in a church if I cannot assent to its doctrines? . . . Shall the church impose on its members a doctrinal test?"—these are still burning issues. Upon their answer hinges the power of the church to adapt its message to the new age. It is aside the point to say that such questions *ought not* to exist; for not Fosdick alone, but thousands of humble preachers and would-be preachers must answer these questions—if not before church tribunals, at least before their own consciences. Mrs. Ward made Elsmere reply by severing his connection with the church. Fundamentalists of the present day would commend him for this stand. But if the scene of the story had been laid forty years later, would the answer be the same? I do not know. We have moved on, a generation and more, since the book was written. Duty, like truth, assumes new forms. To Elsmere, it was more important to be true to his ideals and fulfil his vision of the New Brotherhood of Christ than to curry favor with church officials. I am inclined to believe that, in 1926, the same devotion to duty and loyalty to ideals would impel him, not to leave the church, but to remain in it to purify and strengthen it. But would the church officials let him? The answer is still in the making. Choices must still be made between loyalty to creeds and loyalty to conscience. Some day the disharmony will be overcome.

For the student of philosophy, the work has an added interest in its excellent portrayal of the personal side of the life of T. H. Green. Those who know Green only through his somewhat ponderous utterances in the *Prolegomena* are unaware of the delightful intimacies of his Sunday afternoons with his students, and of the religious passion which glows in his chapel addresses and makes God seem to his hearers an immanent, living reality. Mrs. Ward has deftly given us a picture of him, not only as the guide and philosopher, but as the *friend* of his students. We find in the story numerous epigrams quoted from his religious addresses, such as:

> "Conviction is the conscience of the mind." "God is not wisely trusted when declared unintelligible. 'Such honor rooted in dishonor stands; such faith unfaithful keeps us falsely true.' "

The combination of theory with practice which made Green both a keen philosopher and a useful citizen is suggested in the advice which keeps Elsmere studying amid a multiplicity of parish duties—advice which still holds good for any young preacher tempted to forsake his study desk:

> "One half of your day be the king of your own world, the other half the slave of something which will take you out of your world into the general world of the people."

The essence of Green's religious philosophy is summed up in the words:

> "The thought of man, as it has shaped itself in institutions, in philosophies, in science, in patient critical work, or in the life of charity, is the one continuous revelation of God. . . . Learn to seek God, not in any single event of past history, but in your own soul,—in the constant verifications of experience, in the life of Christian love."

Robert Elsmere is an old novel. Most of the younger generation have never heard of it; and their elders who may have read it clandestinely in their youth, as setting forth strange doctrine, have doubtless long since forgotten it. It reads now like a rather mild revolt against the traditional orthodoxy—there has been so much more strenuous revolting since that time! Most of us would not care to subscribe to every element in the position which it sets forth—we may even think it has revolted too far. But in any case, its theme is one of perennial interest to all who seek a clearer understanding of the relations of ecclesiasticism to religious faith.

And the philosopher whom it portrays still lives—in the lives of thousands who gained from him a nobler devotion to duty and a saner, more rational faith. After all, the past is pretty closely linked with the present, for his widow still lives in the flesh; and at the age of eighty-two[1] she is still active in numerous civic enterprises with which she and Professor Green were both connected before an early death cut short his work. In a letter written recently from her home in Oxford she says: "It is so long since he died (42 years) that it is always a pleasure to know he is studied and valued by students of philosophy and thus he still lives."

Amidst the mass of current literature which the presses are pouring upon our desks, it might not be a bad idea to get this old novel down from the attic, wipe off the dust, and see what it has to tell us of religion, and duty, and a noble life spent for the advancement of the things of the spirit.

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[1] Written in 1925.

FREEDOM IN A RATIONAL UNIVERSE

BY R. D. CARMICHAEL
University of Illinois

A world in which character can be a significant actuality must possess two leading qualities. It must be an orderly world, it cannot be a chaos; and it must have room for that freedom of choice which is essential to the development of ethical selfhood. No moral value can inhere in that which is determined by inexorable law. It is not a moral virtue in a stone hurled from the hand that it moves along the appropriate path without the swerving of a hair's breadth. All this has been known to our teachers of ethics from time immemorial. Why, then, should we raise the discussion again? It is not that some people of influence and authority have forgotten the truth or have been so troubled by the difficulties in the apparent conflicts arising from it that they have postulated the absence of freedom, though this would be a sufficient reason. My purpose in writing is to assist in giving currency to certain far-reaching considerations on the problem recently set forth by Boussinesq.[1] These are quite unexpected and certainly have in them considerable novelty and value in the treatment of the problem of freedom both from a philosophical and from an ethical point of view. Before passing to his argument it is desirable to set forth some considerations concerning the general problem of the existence of freedom in a rational universe.

In a world of chaos there seems to be no room for those stabilities which are necessary to the formation of character. Unless phenomena are orderly there can be no orderly relation of the individual to phenomena. If all of one's relations are chaotic one cannot develop the stabilities which are implied in moral worth. Now to be orderly in a way contributory to the formation of character is a relative and not an absolute matter. Phenomena as conceived by the moral agent must be orderly. This agent must be able to see the laws inherent in the phenomena and there must be a certain intimate solidarity between them and the laws of his own thinking. That is to say, the phenomena in the universe, as viewed by him, must be rationally connected. If events are subject to certain laws they must also be subject to those additional laws which are logical consequences of the first; in other words, there must be a certain common or commensurate part in the laws of phenomena and the laws of mind.

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[1] J. Boussinesq, *Cours de Physique Mathématique, Compléments aux Tome* III, pp. 1-98.

Now if the agent is subject to inexorable laws that determine his conduct completely, no moral or ethical quality can attach to its conduct. We can commend the act of an individual as worthy or noble only if we feel that some element of choice on his or her part was involved in the act. In fact, we see with a clear conviction that character can be a significant reality only if there are numerous points in experience at which a real freedom of choice is possible. It is not inconsistent with the development of character that the individual is in many ways subject to law. That his body is subject to the law of gravity does not interfere with moral character. Equally free from such interference is the fact that his food is digested in accordance with the principles of physics and chemistry. In fact, the presence of such law in his body and his environment seems to be necessary to the formation of those stabilities which are essential to character. But it is equally necessary that he shall not be subject to a complete determination; there must be significant room for real choice.

Now it has been held by some that the existence of comprehensive law in the world and the existence of freedom of choice in the individual moral agent are mutually contradictory. It has been asserted that chaos necessarily reigns unless everything is subject to law. It has been claimed that the possibility of natural science—a body of truth which certainly exists effectively—requires that all phenomena be subject to law in such sense that every event is completely determined by its antecedents. It is hard to see what argument can be adduced in support of this thesis; and those who put it forward do not uphold it effectively. But its existence may serve to remind us that there is a real difficulty (to some minds at least) in the conception of the coexistence of natural law and the freedom of the individual moral agent.

To me it has never seemed that there is (or can possibly be) any self-contradiction in the thought that the law to which the universe is subject is of such sort as to allow a large measure of choice to the individual moral agent. It is not that the law operates sometimes and at other times does not operate; it is rather that we require laws of such nature as to leave certain points or places of indetermination, so far as the law itself is concerned, these being the points at which choice becomes effective. The needs of ethics seem to require that these points of choice shall be frequent in our experience.

It appears to me that the needs of science and the needs of the moral life will both be met in case our world of experience has the following qualities as to law and the possibility of choice. First, there is to be a certain range of phenomena in which events are subject to an inexorable determination; this is the realm of natural law. In the second place, there are to be significant circumstances under which natural phenomena are amenable to direction by the mind, so that the course of events is not subject throughout to a mechanistic determination. This freedom will naturally be apparent in more marked degree as we come to those events in which mental states and activities play a larger part.

The scientist rightly insists upon the presence of law as the necessary condition for the prosecution of his enterprise; but he seems to me to have erred when he has insisted (as he has sometimes done) that his work can be successful only if all phenomena are subject to a strict determination. It is quite sufficient to his main needs if certain important classes of phenomena, and these alone, are subject to determination.

In that case his problem becomes a three-fold one. He has first to find out in what range of phenomena a law of strict determination applies; then he has the problem of determining the particular laws to which the relevant events are subject; finally he needs to examine the relation of law in these ranges to the exercise of freedom in other ranges. He does not need to pursue these ends one at a time. In fact, his best success will probably be attained if he treats all of them conjointly; but in any case we can distinguish the three types of investigation which he must carry out in order to attain the goal of a satisfactory knowledge.

Thus we see that the success of science requires the existence of comprehensive natural laws, and that the needs of the moral life make necessary a significant measure of freedom in choice to allow for the development of character; and we have seen further that there is a conceivable situation in which each of these requirements may be met without interference by the other. But the problem is not one of the thinkable possibility of meeting these two needs at once. The question to be answered concerns a matter of fact and not a matter of desire or convenience. The fact that both science and moral character exist in our world shows indeed that the phenomena of the world are in some way consistent with the existence of both of these; but that alone does not give us any information as to the way in which the two things inhere at the same time in our single system. We are left with the problem of examining natural law, so far discovered, to see whether its characteristics bear out the sort of description we have given of the nature of phenomena.

Before we take up this consideration of natural law a word of warning is desirable. It is impossible to attain transcendental conclusions by means of scientific method. From his desire to carry all minds who examine a matter to the same conclusion concerning it, the scientist has so narrowed his range of method and his subjects of investigation that he has left out of consideration everything which can lead explicitly and directly toward a transcendental conclusion. His purposes entirely justify his procedure. But this procedure rules out the possibility of transcendental conclusions. If, therefore, we seem to arrive at a transcendental conclusion it is not that we derive it by scientific methods. But we can hope to show by scientific methods that the laws of nature so far discovered are of such sort as not to be inconsistent with transcendental conclusions reached in other ways. This is the main purpose of the brief argument which we are to present.

In connection with this matter of transcendental conclusions, the investigator in natural science has frequently made an error of a sort that seems very strange to us and almost unaccountable had we not become quite familiar with it. Since his methods of thought have never led him to transcendental conclusions, the scientist has frequently come round to the opinion that there is no valid way to reach a transcendental conclusion and therefore that all such conclusions must be false or at least unfounded. His error is due to the failure to observe that the apparatus of thought with which he begins his investigations has been chosen in such a way as to preclude from his work the possibility of a transcendental conclusion. It is a consequence of this that his methods leave entirely untouched all matters belonging to the transcendental.

Let us enquire as to what is the character of the most frequently used and most comprehensive form into which the scientists have thrown their statements of the most exact and the most far-reaching laws of nature. Here, if anywhere, we are to find out what are the chief characteristics as to quality of the laws of nature so far discovered. We do not require to deal with the individual laws. For our purposes we need only certain characteristics. By all persons conversant with the facts it will be admitted that certain sorts of equations studied by the mathematicians afford the language for the expression of these laws; these are the so-called differential equations. Many of the laws of nature which are often expressed in other forms are capable of an equivalent statement by means of differential equations. A great number of the most fundamental ones exist only in the form of statements essentially involving differential equations. For the purposes of the argument we shall therfore deal with those laws of nature which are or may be expressed in the form of differential equations.

It is a matter of fact that the main bulk of the exact laws of physics and chemistry are expressed in terms of the derivative of a given state with respect to the time; that is to say, they are expressed by means of differential equations. We have succeeded in reducing the theory of matter and motion to a comprehensive form only by means of differential equations. The laws of the motion of non-living matter are probably obeyed also by the matter in the bodies of living organisms. Since we do not know with certainty anything about this beyond a preliminary degree, we shall have to contemplate the possibility that it is not true.

If we suppose for a moment that the matter of living organisms is not subject to the laws of non-living matter, we shall have to admit that we know nothing conclusive concerning the laws of matter in living beings. In that case our fundamental thesis is granted without further argument, namely, that the present state of knowledge of natural law does not demand the conclusion that there is no room for a real freedom of choice in our world and our life. Therefore, if other considerations point to this conclusion, there can be nothing in natural science to conflict with it or to prevent our drawing this conclusion. In this hypothetical case, then, there is no reason to suppose that real freedom of choice is prevented by what is known about natural law.

We return to the other and the far more probable of the two possibilities with which we are confronted, namely, the possibility that the matter in the bodies of living organisms is subject to the same laws of physics and chemistry as non-living matter. We have seen that many of the most significant of these laws are expressed by means of differential equations. And for the sake of unity in treatment we have agreed to confine our attention to these alone, being justified in this by the fact that a consideration of the other laws cannot possibly affect the principal conclusion of the argument.

What is there peculiar about the solutions of differential equations, and consequently about the laws expressed by means of them, which is relevant to our present argument? We can reach the answer to this question best by observing a certain fundamental fact about the solutions of all differential equations: these solutions are not uniquely determined by means of the differential equation itself. To the differential equation we have to adjoin certain information about the state of the system of phenomena at a certain instant or the states at a certain succession of instants. There are some so-called singular conditions attaching to these states. If the relevant solution is determined by means of a certain state and we attempt to follow up the successive states of the system, two sorts of conditions are logically possible. In one of these sorts the successive states are uniquely determined by means of the equations and the initial state or states; in the other sort we may reach a certain state of indetermination where the previous states leave the next states undetermined. Here is a situation in which the laws of mechanics alone are insufficient to determine the following course of events. If such a state arises in a given system, some directive agency seems to be necessary to start off the activity, and the trend which it shall take is to be determined by this directive agency. (It does not seem to require force, in the ordinary sense, to give this direction; but it is not necessary to our purpose to enter upon a discussion of this point.)

It must be admitted that we know very little one way or the other about the actual presence of points of indetermination in nature and the frequency of their distribution. The nature of differential equations is such as to admit of a very high frequency for them. It seems probable that such a condition of high frequency is realized in the bodies of living beings. We cannot say with certainty. But the purpose of our discussion is not the proof of transcendental conclusions by science, but rather to show that science does not prove the impossibility of freedom in our world, and in particular of a freedom which is consonant with the simultaneous existence of natural law. Now we have shown that the type of law which is dominant in physics and chemistry is known from mathematical considerations to allow just such points of indetermination as may require the act of a directive agency and that these points of indetermination may have a high-frequency distribution among the points of our experience. Surely there is nothing in science to show that this theory is untenable.

This is far from proving the existence of freedom; but it does show that science is not in a state to deny the existence of a real freedom in the world of experience. Consequently the way is clear to contemplate those considerations concerning human nature and the immediate deliverance of our own thought about our essential nature, unhampered by any inhibitory considerations from science. The latter has no effective counter argument to oppose to that of the ethical philosophers. In fact there is strong reason from the scientific point of view itself to believe that the rationality of the universe is of such sort as to be consonant with the existence of moral agents. The present state of the laws of nature points as a matter of fact to a conception of such a law as gives room—without suffering even a momentary eclipse—to a view of the universe in which the possibility of choice arises as frequently as the needs of ethics may suggest as desirable. We can view our world scientifically as subject to law and at the same time peopled with moral agents possessing a genuine freedom of choice.

CURRENT THOUGHT

A Quarter Century of Theological Thinking in America

An interesting and authoritative summary of trends in contemporary theological and religious thought, from the pen of Professor Gerald Birney Smith, is to be found in the November *Journal of Religion.* The writer, in brief, discovers a decided tendency in the direction of naturalism and positivism, and of the social and psychological, at the expense of the metaphysical, the mystical, the miraculous, and the institutional.

The method of religious interpretation, first of all, during the last two decades, has swung away from the *a priori* and metaphysical approach of Hegelian Idealism and Bownian Personalism to a Ritschlian emphasis upon revelation and religious experience; and the latter, in turn, has been superseded widely by the empirical and historical point of view.

Closely associated with method is the problem of religious authority, which has of late become a major issue. Literal interpretations of sacred scriptures now find themselves somewhat discredited, since "modern biblical scholarship has been making untenable the conception of the Bible which is essential to both Catholic and orthodox Protestant theology. . . . A serious crisis is thus created. It would be fatal to the intellectual prestige of Christian thinking if it refused to follow the scholarly experts in the interpretation of the Bible; but if theology follows them it will be compelled to abandon the traditional appeal to authority." The Roman Catholic church, due to its central authority and organization, has been able to guide officially to the anti-modernist position, thus checking modernism within its ranks. Protestantism, however, without ecclesiastical organization, has been unable to effect this solution. The result has been a steady movement away from Biblical textual interpretation to a study of *religion.* "One service which the fundamentalists are rendering by their definite insistence on scriptural authority is to show the vagueness and impotence of some of the liberal attempts to use the old phraseology while robbing it of its natural meaning."

A new attitude, the author finds, has appeared towards miracles. Whereas heretofore the miraculous has been appealed to as the central argument for Christianity, it now holds an insignificant place. "It would make almost no difference in the content of much modern theology if the whole problem of the miraculous were ignored. The question persists largely because it was so prominent in the older dogmatics."

The absoluteness of historical religion is likewise being challenged. Such religions, it is maintained, have always been fallible, a product of their times and location, and "hardly constitute the elements for an imposing doctrine of absoluteness."

> "As a result of the discussions concerning authority, supernaturalism, and absoluteness, the cleavage between theological parties is becoming more and more pronounced. On the one hand is the determined effort to stem the tide of historical and critical interpretation, and to recall Christianity to its former position of absolute certainty resting on divine establishment. On the other hand is a growing disinclination to spend time on ideas which seem inevitably to bring one into conflict with historical facts. Fundamentalists are insisting that the ancient attitude toward authority and the supernatural is essential to Christian faith. Modernists are increasingly attempting to understand the Christian movement in terms of social evolution.
>
> "As a result of the growing complexity of biblical scholarship and the increasing difficulty of establishing a satisfactory conception of authority, all except fundamentalist theologians have very generally turned to Christian experience as the immediate source of theological convictions."

With this empirical approach many speculative questions have lost their appeal, such as the doctrine of angels, last things, the metaphysics of the Trinity and the two natures in Christ. Humanistic values have called for a reconsideration of salvation and atonement. The legalistic interpretations, under the Ritschlian emphasis upon the authority of Christ in place of apostolic commentators, have largely given way.

> "The Christ of traditional theology is no longer identified with the Jesus of history. Christologies and theories of salvation are seen to be to a large extent reflections of the religious notions of theologians. . . . There is a widespread discrediting of the very vocabulary of the traditional Christology, on the ground that speculation concerning a metaphysical 'nature' furnishes no aid in discovering precisely what kind of a person Jesus of Nazareth was."

Thus an empirical appeal is being made to verifiable experience rather than to "mere proof-texts." The divinity of Christ is "found in the spiritual quality of his life in fellowship with God, rather than in a metaphysical 'nature.' Christianity is conceived as 'Jesus' way of living,' and the Christian's relationship to Jesus is defined in accordance with this conception."

The evolutionary hypothesis, needless to say, has become important, and natural science has become a body of belief with which to reckon.

> "The doctrine of God has in the past been elaborated in relation to a philosophically construed universe. The present demand is for a doctrine which shall be related to the scientifically construed universe. The categories of political sovereignty, or of philosophical idealism, do not lend themselves to this new interpretation. It would seem that there is an interesting new field of theological investigation and interpretation ahead of us in the immediate future."

The author observes, however, "a sharp reaction" against modern tendencies.

> "The leaders of this reactionary movement are endeavoring to enforce conformity to the authoritative method, and are laying primary stress on the doctrine of the infallibility of the Bible and on the essentially supernatural character of Christianity. The liberal movement is being compelled to face more critically the question as to the nature of religion and as to the way in which theology is related to religious experience. . . . While many interesting changes in doctrine have occurred it would seem that even more interesting developments are ahead."

May piety and intelligence go hand in hand into the interesting days ahead! Is it too much to suggest that a mere positivism and empiricism which repudiates metaphysics is cutting the root of religion? Religion is the most metaphysical thing in man's life, and cannot thrive where a deliberate attempt is made to discard "an intense conviction of the reality of those things which we do not see." Religion without metaphysics is a dead seed.

A Personalistic Interpretation of the Sankhya Philosophy

It is commonly known that theistic and personalistic views are to be found in the philosophical literature of India. In the *Philosophical Review* for January Mr. A. K. Majumdar presents evidence to sustain his contention that the Sankhya philosophy is strictly a personalism. His thesis is well summarized in the final paragraph of his article, *The Personalistic Conception of Nature.*

> "According to the Sankhya, everything that is real and a real constituent of the world is a unique centre in and through which the Absolute Self-conscious Spirit realises itself in a unique manner and returns upon itself as a fully-realised Being. In this sense, everything partakes of the nature of the Absolute, and is therefore, a perfect subject-object from its own point of view. But everything is not perfect from the beginning; it is actually imperfect, but potentially perfect, that is, capable of attaining perfection by gradual evolution. Consequently, every thing, except the Absolute, is a subject-object possessing different degrees of the unity of self-consciousness. Thus we get three forms of personality: the Absolute is Super-person; the human beings are persons, and the other forms of being may be called, *en bloc,* sub-human persons, understanding by the last persons who possess more imperfect forms of self-consciousness. The Sankhya therefore preaches pan-psychism or a personalistic conception of nature, the world being a system of spirits."

The Revolt Against an Atomistic Doctrine of Personality

That a number of contemporary schools of psychology are protesting against the "bundle hypothesis" of mind, the atomistic and "mosaic" psychologies popular in the nineteenth century, and are insisting upon a conception of the object of psychological study as a unified or organic being, is the observation of Professor Mary Whiton Calkins in the *British Journal of Psychology, General Section,* for January, in an article entitled "Converging lines in contemporary psychology." The five schools of revolt mentioned by the writer are behaviorism, the *Gestalt-psychologie* of Germany, psychophysical personalism, psychological personalism, and the psychology of the Unconscious. The first, behaviorism, stands somewhat apart within the group, inasmuch as it rules out consciousness. Its demand, however, is strictly for an organic conception of behavior. The *Gestalt* psychology of Wertheimer, Koffka, and Koehler, is "hotly opposed" to atomism; its central doctrine is the reality of perceptual and cognitive wholes which are not mere sums of parts. To the present time, however, this school has failed to make explicit the doctrine of the self which is basic to it. The left wing of Personalistic psychologists, the psycho-physical personalists, including Stern, McDougall, Angell, and Jennings, emphasize wholeness rather than consciousness as constituting Personality. Consciousness is conceived as a supremely important function of the organism. The right wing, or strictly psychological personalists, including Rehmke, Mitchell, Calkins and others, conceive psychology as the study of essentially conscious beings (selves, subjects, persons). Even in the psychology of the Unconscious, in spite of various doctrines of split-off consciousness or selves, an essentially organic view of the Self is maintained. Miss Calkins gives as her closing comment the following suggestions towards a closer convergence of these groups:

> "Extreme behaviorists, still repudiating introspectionism of the atomistic type and still retaining their conception of the reacting organism must admit consciousness as one observed form of this reaction. The *Gestalt*-psychologists must develop their neglected doctrine of the basal *Gestalt,* that is to say, the experiencing individual. The psycho-physical personalists must concern themselves as much with the psychical as with the physical aspect of the conscious organism. Finally, the 'narrowly psychological' personalists, admitting as they do the methodological possibility of a psycho-physical person, must recognize in this conception, rather than in their own doctrine of a merely conscious self, the centre of present-day anti-atomistic psychology." W. H. L.

NOTES AND DISCUSSIONS

Asters in Billingsgate

Brownbonnet hates dirt. When, therefore, her feet were turned into Billingsgate, it had to be by a ruse. We had not gone far before she exclaimed on the noisome bedlam, but by then retreat seemed more difficult than advance.

To those who have seen Billingsgate there is no need of description. To those who have not seen it no description is adequate; the walk so narrow that two cannot go together; the ooze that covers the cobblestones of the street; the heads covered with turban-like pads for carrying loads; the loads themselves reeking boxes of fish, all the food of the sea; the teaming hucksters' carts; people quarreling over the right of way in an English so foreign to the language of our birth that the speech might as well have been in Choctaw. The only language one could well understand was the rather pointed demand of Brownbonnet to be taken away. Just then in the midst of this interminable confusion crept a huckster's cart like a loaded hay-wain crowded with asters from the sweet English fields. Their faces that Autumn morning were still fresh with the dew. Asters in Billingsgate! All other thoughts were driven from mind by the glory of it.

This was not the first time in our joint lives that I had been saved by some such miracle. Every Billingsgate seems to have its asters, and wise is he who finds them. It may be the device of the universe, or of the merciful God, or of the human spirit itself to save it from utter poverty, utter humiliation, utter defeat, as I have seen the coarse blossoms of the roadside in the broken cup of squalor. No situation is entirely wanting in something in which the soul may pride itself; no society is ever quite deprived of true and radiant fellowship; no defeat is without its compensations of loyalty; no failure is lacking in some blossoms of hope. It has ever been so. The dreaded situation has brought a new and deeper and more blessed understanding of life; a prized and noble friendship of such quality that neither change nor the gnawing tooth of time could efface it; a spirit of devotion raised against misfortune that spoke of vaster though not diviner worlds; a new administration of the sure mercies of God.

Strangely enough we discover in the late track of the years, that these are the only unfading laurels life has given us. The Asters of Billingsgate outweigh all other sights. They are a portion of the imperishable treasures of immortality. To be able to see and to seize them is perhaps the main difference between success and failure. Whoever takes account of the asters in Billingsgate is heir to the promise of broad meadows and running streams, for it is these rather than his baser surroundings in which he makes his habitat. There is a law of the spiritual universe that acts inevitably. "Where the treasure is there shall the heart be also."

R. T. F.

Along the Bookshelf

Evolution in the Forum

CONCERNING EVOLUTION, by J. Arthur Thomson. Yale University, New Haven. Pp. x-245.

THE DOGMA OF EVOLUTION, by Louis T. More. Princeton University Press, Princeton. Pp. 387.

THROUGH SCIENCE TO GOD, by Floyd L. Darrow. The Bobbs-Merrill Co., Indianapolis. Pp. 309.

TO CHRIST THROUGH EVOLUTION, by Louis Mathews Sweet. Geo. H. Doran Co., N. Y. Pp. 351.

EVOLUTION FOR JOHN DOE, by Henshaw Ward. The Bobbs-Merrill Co., Indianapolis. Pp. 354.

The recent debates concerning evolution have created an incentive to the study of biology and popular philosophy, and the response of American publishers to the demand for literature in this field has been so generous that no one may longer find reasonable excuse for ignorance. Scientists, philosophers, and laymen have in turn taken up the task of enlightening the public concerning the details of the issue. The books are nearly universally conciliatory, maintaining the integrity both of the religious view of the world and the validity of the evoluntionary postulate. Thoroughly understood, so these writers agree, there is no lack of harmony between the two.

That evolution and God are in nowise incompatible, that such a view lends richer content to the wealth of the cosmos, are the conclusions of J. Arthur Thomson's *Concerning Evolution,* a volume comprising the first series of lectures under the new Dwight-Harrington-Terry foundation delivered at Yale University.

The author has written clearly, simply, and with interest, in such fashion that no layman need be in ignorance of the theory of evolution in its broader aspects. A conservative view is taken, one which, while insisting that continuity is an essential part of the idea, that "our present-day fauna and flora and their inter-relations have arisen without gaps, though not without leaps, from simple antecendents which were their entire pre-conditions," still admits that the details of the process are exceedingly obscure. Religion and science have no quarrel; "there is no possible way in which science could disprove God." Moreover, "there is no alternative—'God *or* Darwinism'; no alternative—'Man as child of God *or* man as highest mammal'; no alternative—'divine creative *or* cosmic evolution.' For all these express confusion of thought. The alternative is—'Science only or science and the vision of God.' " The author points out elsewhere that the fanciful primitive savage, "red in tooth and nail," is erroneous. "As our knowledge increases, we realize that there is little justification for thinking of primitive man as brutal or brutish; there is reason for thinking of him as clever and kindly, adventurous and inventive." Professor Thomson points out the danger of "biologisms" in which an attempt is made to simplify falsely the inheritance of man, and his distinction from the brute world. "Some people seem never to get past talking of man as if he were no more than a bipedal mammal with an unusually big brain and a strong herd-instinct." The most recent attempt in this direction is to deprive man of moral responsibility by asserting that he is a function of his ductless glands. But, observes the author, "It still remains a man's business to try always to be captain of his soul and master of his fate. To acquiesce in being an endocrinal slave means relinquishing a birthright."

The volume is rich in detail, and contains some twenty-five illustrations. W. H. L.

The reviewer cannot recall any attack upon the dogmatic misuse of scientific hypothesis stronger than that which has been written by Louis Trenchard More, Professor of Physics in the University of Cincinnati. It seems quite probable that science may yet be compelled critically to examine her own philosophical assumptions. There is a grave question whether she can go on her way careless of these assumptions and confusing assumption with fact. Professor More is no empty protagonist of religious bigotry. He has science as his handmaid. His book, *The Dogma of Evolution,* is all the stronger for its allegiance to scientific method. He also has at his command the facts of history, and he marshals them in a telling way. The aim of the book is well expressed in the Dedication:

> "In earlier times, which we so complacently call the Dark Ages, those who wished to obtain an insight into spiritual mysteries or to learn the fortunate or unfortunate outcome of their enterprise were wont to consult astrologers. For it was foolishly believed that our spiritual and temporal affairs were determined by the positions and motions of the planets in their orbits. Is it not true that men, today, are seeking the source and law of our spiritual being in the configurations and motions of the atoms which compose our corporeal substance? Is there any real difference between attempts of the ancient astrologers and the modern biologists? Only time will tell."

The absurd length to which men have gone in the pursuit of hypotheses he thus sets forth:

> "Huxley, finally, in his criticism, states: 'Any one who has studied the history of science knows that almost every great step therein has been made by the "anticipation of Nature," that is, by the invention of hypothesis, which, though *verifiable,* often had very little foundation to start with; and, not unfrequently, in spite of a long career of usefulness, turned out to be *wholly erroneous* in the long run.' A few pages later he adds: 'The progress of

> physical science, since the revival of learning, is largely due to the fact that men have gradually learned to lay aside the consideration of unverifiable hypotheses.' This sounds like good advice, but he neglects to say how, when a hypothesis is advanced, one can tell whether it will turn out later to be of the verifiable or of the unverifiable sort. The history of the hypothesis of the nature of light is one of the best examples in the history of physics. Newton proposed the hypothesis of corpuscles; it was a century later shown to be unverifiable by Young who proposed the hypothesis of waves in an elastic ether; three-quarters of a century later this proved to be unverifiable and was replaced by Maxwell's hypothesis of waves in an electro-magnetic aether; today many physicists say there is no aether. One cannot but suspect that Huxley thus condemned a too strict adhesion to Bacon's inductive method because he, himself, was passionately determined to 'put over' Darwin's hypothesis of natural selection as a sufficient cause for evolution, although he knew and had stated, that it did not rest on an adequate basis of observation and experiment. And, today, we find it discarded as an unverifiable hypothesis. Some day, men of science will learn that hypotheses cannot always be avoided, but that they are to be used only as a confession of ignorance, and never be permitted to stand in the way of the certain and sure progress of induction. Bacon may justly be criticised for mistaken notions, but when all has been said, he stands as the one who best understood the revolt of the Renaissance, and who pointed out most lucidly the way for the revival of science. And for this reason, such a criticism as Huxley's should be discussed at length because we are, today, lapsing again into metaphysical scientific methods through our unrestrained use of unverifiable hypotheses. A return to the sober and wholesome method of Bacon would do us a world of good. Our debauch of evolution, of aethers, and of electrons is fast carrying us back into the state of mediaeval absurdities."

There will be a distinct tendency on the part of some to laugh Professor More out of court or, at least, to brand his work with the mark of absurdity. He seems to us extreme at times in his judgment of motives and personalities, but he has great cause. We wonder if he does not somewhat overlook the value of the evolutionary hypothesis in its influence upon research, but we could not wish the uncritical protégé of science any better intellectual luck than to read this book from end to end and attempt seriously to answer it. It is not really hostile to science, it is hostile to the common abuse of scientific hypothesis, and there is great need for clearing at this point. R. T. F.

Mr. Floyd L. Darrow's *Through Science to God,* intended for a popular audience, covers not only the case of evolution, but purposes to enlighten the public mind concerning the newer points of view in both science and religion. Holding strictly to the doctrine of the immanence of God in the world, and writing from a liberal Christian point of view, the author traverses the whole field of philosophical controversy in the church. He writes illuminatingly concerning the world of myth, the meaning and evidence of evolution, the character of Biblical inspiration, the evidence in science, for the reality of God and immortality, the problem of miracle, natural law, relativity, and a closing chapter on the faiths of scientists. The volume is both instructive and inspirational. It may be pointed out that the author grants too much to Darwin when he insists (p. 82) that Darwinism is the most plausible *descriptive* explanation of evolution. For natural selection, although every student must recognize its factuality, is descriptively impotent to explain either the direction of evolution or the arrival of the higher species. And this is just the problem at issue. Mr. Darrow has written in an easy and interesting fashion, and is, on the whole, sane and trustworthy, if at times somewhat easy-going in his philosophical assumptions.

A critical estimate of the doctrine of evolution in the light of philosophy, history, and religion, and somewhat heavier reading than the popular treatises, is expounded in *To Christ Through Evolution,* by Professor Sweet of the Biblical Seminary in New York. Taking his point of departure from the fact that biological evolution is but a phase of the general problem of history, he suggests that evolution must explain not only the body of man, but spiritual personality, man's consciousness of evil, and the divine man Jesus. What, in brief, is the relation of the evolutionary process to efficient causality, teleology, creation, history, personality, evil, and Incarnation? Thus the original problem of biological evolution takes on larger proportions. A thorough analysis of the mechanistic theories of evolution culminates in the author's defense of orthogenesis. Development is creative. The writer observes finely that:

> "The real mystery of the advent of man is not the appearance of a brain, of whatever uniqueness of type, but of that which transcends and uses brain—mind, self, spiritual personality. There is *process,* slow, hidden, gestatory—and there is *culmination,* sudden transcendent, inexplicable. Both are phases of the divine working. . . . Evolution might conceivably explain personality, and thus, by inclusion, sin, if it could explain anything. The truth of the matter is, however, that whenever evolution is used in any other way than as a *modal description* of the process of correlated change which lies between a given antecedent condition and another given consequent condition, it immediately and inevitably becomes an unconscious feat of mental juggling in which there is surreptitiously slipped in at the beginning that which is taken out at the end."

Professor Sweet sustains his position by no mere argument for a negative. He presents evidence from anatomy, psychology, ethics, and religion to prove that man, although physically related to the primates, is nevertheless physically and mentally a unique act of creation.

Man "made his appearance by an act of God, and by a sudden upward leap, developmental in the sense that it involved a directive synthesis of processes already in operation throughout the animal kingdom and an inherited organic basis, but creative in the sense that it was not contained, and therefore that it cannot be explained, by anything which went before."

The author expresses belief in the primitive innocence and harmony of man, symbolized in the Biblical account: " 'original sympathy—broken'—that is man's history." Thus he finds literally justified the traditional doctrine of the fall of man. Finally, the doctrine of the Incarnation is shown to be in no way in conflict with a scientific view of the world. Rather, "The immanence of God in matter, in law, in orderly process, becomes eminent in the supreme personality in which God *for the first time in history* adequately expresses Himself." A final chapter sustains the scientific validity of the doctrine of immortality and the cosmic worth of man. As the author remarks tartly, "Teleology must be in the process because it is manifest in the result." Thus redemptive religion finds no conflict with science well understood.

Mr. Henshaw Ward's *Evolution for John Doe,* written by a layman for laymen, contains notable defects as well as merits. On the one hand it is a fascinating and breezy exposition of pure Darwinism. The author is to be congratulated in presenting a fine and illuminating discussion of the struggle for existence, in which he describes how, contrary to the popular picture of red tooth and bloody claw, the process is rather insensible, quiet, unconscious. On the other hand the volume is logically incoherent, and will add confusion to the issue among those students seeking clarity, concerning the problem of causality, which is the real issue involved. If the author had assumed a kindlier and humbler attitude towards metaphysics which he knows only by hearsay and towards which he gestures a bit of sly but unfortunately ignorant sarcasm, his volume would have had higher merit. For example, the author thoroughly misunderstands the logic of science (p. 175f). The logical difficulties culminate in chapter twenty-four in which he insists upon a mechanistic interpretation of evolution. Concerning causality and explanation the author is in utter confusion. He insists that "chance," which does not mean chance, is the fundamental causal factor or explanatory principle, but that in the final issue we have no knowledge of what it does mean, save that we know that it doesn't mean orthogenesis! (p. 318) Natural selection explains the bee's sting, but explains nothing. Natural selection is the principle of evolution, and yet it is unimportant. It is the pragmatic doctrine of the scientist who is unable to discover any other working possibility, and yet it is also the gospel truth. Finally, explanation explains, and on the other hand explanation does not explain. All men above the moron level must believe in evolution, and yet evolution is not demonstrable. As a popular exposition of pure Darwinism Mr. Ward's book is excellent; but it is unfortunate that a volume while superficially scintillating should lend confusion to the philosophic problem which it attempts to solve and at the same time avoid. This volume is clever but untrustworthy.

W. H. L.

Science and Scientific Dogma

ORGANIC ADAPTATION TO ENVIRONMENT, Edited by Malcolm R. Thorpe. Yale University Press, New Haven. Pp. xviii-312.

THE INHERITANCE OF ACQUIRED CHARACTERISTICS, by Paul Kammerer. Translated by A. Paul Maerker-Branden. Boni & Liveright, N. Y. Pp. 414.

THE RELATION BETWEEN SCIENCE AND THEOLOGY, by C. Stuart Gager. The Open Court Publishing Co., Chicago. Pp. 87.

ETHER AND REALITY, by Sir Oliver Lodge. George H. Doran Company, N. Y. Pp. ix-179.

THE EINSTEIN THEORY EXPLAINED AND ANALYZED, by Samuel H. Guggenheimer. The Macmillan Company, N. Y. Pp. vii-326.

There has been, long-standing, a need that some one of authority in the scientific world should write of the cell in its adaptation to environment in such fashion as to be easily understood. Furthermore, there has been need that such authority should express itself in a fair, judicial way for the purpose of enlightenment rather than the exploitation of a favorite or extreme hypothesis. Both these desirable ends have been accomplished in the symposium edited by Malcolm R. Thorpe and participated in by members of the science faculty of Yale University. The book is entitled *Organic Adaptation to Environment*. The work is rather unusual for its fairness. It is scientific in that it makes no attempt to evade difficulties and is frankly honest where it cannot claim knowledge.

There is practical unanimity of these leaders in their treatment of the Lamarckian theory. It is an act of real courage in these days, when the short-sighted religionist is raising so much trouble for scientific effort, to admit the collapse of the old type of dogmatic mechanistic evolution; yet this they do with practical accord.

> "The Lamarckian ideas that the retention or disappearance of the various structures possessed by plants and animals is determined by use and disuse, that organisms possess an inherent tendency to adapt themselves to change in environment, that the development of new structures and the modification of existing ones are determined by the needs of the organism, and that the structural variations thus acquired during the life of an individual are handed

> down from parent to offspring have long since been discarded in most quarters as an explanation of the cause of evolution. How far the pendulum has swung in the opposite direction is indicated by the fact that most geneticists of the present day practically disregard environment as a causative factor in evolution. They maintain that, however much the somatic or vegetative parts of an organism may become modified through the action of environment, the reproductive cells, which alone are capable of transmitting characteristics from parent to offspring, are not affected. Variations, we are told, are brought about solely through spontaneous changes in the germ plasm, and these are in no way influenced by the environment."

This is a welcome relief from much current "science" which, driven by facts out of the Lamarckian doctrine of transmissibility of acquired characters, still insists that it must be true because the scientist cannot otherwise maintain the older type of evolutionary theory. Thus it seems probable that differentiation of species has not come about through individual transmission of acquired characters, as Darwin and Huxley supposed, but by mutations which cannot be, or at least have not so far been, traced to hereditary influences. How these mutations come about, Professor Woodruff says we do not know. This work, clear, dignified and scientific, has no axe to grind as against religion, and will go a long way toward creating that mutual understanding without, and that humility of disposition within, which bespeaks a great new day for scientific discovery and advance.

In days of scientific or other dogmatisms whoever arises to oppose too easily held theories usually proves himself a benefactor to his fellows. Within this classification will undoubtedly fall Dr. Paul Kammerer with his work, *The Inheritance of Acquired Characteristics*. That controversy is usually one of the tokens of intellectual growth is as true in the world of science as elsewhere. With all of his skill the author is not quite convincing, however. Evidently when the doctors disagree so seriously as this book indicates there are two desirable considerations to be taken into account. First, the layman should not too readily accept the standpoint of either party as final, and second, the appeal should be made to facts rather than to dialectic and oratory. The presence of this latter element mars the book in spite of the scientific material which is brought forward to maintain the author's thesis. Doctor Kammerer is very obviously suffering from bitter attack and is not at times above special pleading. He seems to fear that truth may not be able eventually to prevail. So in spite of a certain vehemence of conviction the reader is left wondering if the Doctor is quite as sure of his position as he would like to be. He declares that "the assumption of the inheritance of acquired characteristics necessitates a much more difficult process of relative thinking," than the opposite notion, and assumes this to be the reason for its general rejection by scientists. But science has for a long time rejected the thought of dialectic as settling anything, and it is high time that both parties to the dispute should admit what are the known facts. But Kammerer seems to consider anything better than the admission of ignorance. Such admission seems to him the ending of all science, the deadlock of knowledge. The discovery that the older dogma of mechanistic evolution is in danger is to him sufficient reason for ignoring the facts set forth by Johannsen, De Vries and others:

> "More and more voices are heard insisting that the unparalleled ascension of Mendel's research work has reached the zenith, that Mendelism, and the methods of the 'theory of exact inheritance' (W. Johannsen) as well as the theory of mutation (De Vries and his disciples) are facing failure wherever it is necessary to explain never-to-be-discussed-away manifestations of the descent of races, species, and groups."

His writing lacks the note of scientific candor which would convince, and his attribution of wrong motives and stupidity to those who disagree must result from a deep sense of personal injury. But the backbone of his advocacy of the transmissibility of acquired characters is clearly disclosed, as being the determination to save mechanistic evolution at all costs:

> "The theory of evolution at the present time is pointing in that direction; it is returning to the theory of non-evolution. Celebrated biologists, like Kurt Herbst of Heidelberg and W. Bateson (1913) of Cambridge, openly deride the concept of evolution in their lectures. Stagnation is trump once more!
>
> "Only such a state of affairs makes it possible that, even in a country as progressive as the United States, where there is a decided atmosphere of advancement, public debates are held between the 'fundamentalists' and the 'modernists,' in the course of which scientific evolution is seriously attacked and questioned, by means of enumerating *pros* and *cons* which open up a staggering chasm of know-nothingism and are preposterous—to put it very mildly.
>
> "That such is the opinion about evolution in ecclesiastical circles is not to be wondered at. But it is painfully surprising if such a movement succeeds in influencing the lawmaking bodies to such an extent that, in some of the states of the Union, instruction in biology has been suppressed, simply because, in the course of this subject, evolution was taught.
>
> "In my native Austria, also thanks to the resistance of ecclesiastical together with reactionary cliques of scientists and officials, we have not as yet succeeded in establishing biology in the curriculum of our schools. What, in some Austrian schools, is taught under the name of 'biology' is a virtual sneer at the science, and is rather a science of death than 'the science of life.' Of course, biological instruction in Austrian schools is not the least tainted by teaching

> evolution. Now, what is more dangerous: a state of development not far enough progressed, as yet, or a state of retrodevelopment which, on account of the wire-pulling influence of reactionary elements, like Bryan, Straton, and others, is forced back into a state long since passed?"

When the author closes the first part of his work with the words "Darwinism, therefore, stands justified," he draws too sweeping a conclusion. Darwinism like any other "ism" must be judged by the weight of scientific fact. How this will eventually turn, whether ultimately for or against Darwinism, is a matter not be settled by popular vote nor by mere scientific opinion any more than by an appeal to the Fundamentalist. It is a matter which cannot be settled in the absence of generally ascertainable fact.

The book is very readable, and contains much of very great interest. One would not wish in any way to depreciate the scientific facts brought forth, which may have great weight in arriving at final conclusions, but as yet many will feel that the evidence is not conclusive.

R. T. F.

Perhaps we may forgive the writer of the otherwise admirable little book *The Relation Between Science and Theology* when, under the stress of propagandist motive he exaggerates the sweet innocence and purity of the scientific mind. Mr. Gager would have us believe that all bigotry comes from theology, whereas science is motivated by a pure desire for truth without prejudice and interest. The author, however, cannot hold his position with more than partial seriousness. Recall, for example, the European animosity of yesterday to hypnotism, the prejudice against Pasteur, the metaphysical bigotry of those superstitious scientists who held so tenaciously for centuries to the Newtonian cosmology. The list might be extended indefinitely. Those words of William James ought not to be forgotten:

> "Of all insufficient authorities as to the total nature of reality, give me the 'scientists' from Munsterberg up, or down. Their interests are most incomplete and their professional conceit and bigotry immense. I know no narrower sect or club, in spite of their excellent authority in the lines of fact they have explored, and their splendid achievement there."

Nevertheless we need not be too hard on scientists in this day when the spectroscope has revolutionized traditional conceptions of matter, space, and time. Theologians and advocates of fundamentalism can read with profit this book which so sharply urges a *laissez-faire* policy towards science. And, indeed, religion can afford to let alone natural science so long as the latter is intelligent in her business and is conscious of her metaphysical limitations.

An eminent philosopher observed recently that Sir Oliver Lodge has been doing both some of the finest and poorest of work. His little volume on *Ether and Reality* is hardly to be placed in the former category.

It is, in fact, a modern exposition of Parmenidean metaphysics, and illustrates the difficulties arising from the lack of philosophic training among noteworthy scientific men. The author's thesis, in brief, is the claim that electricity, magnetism, matter, and force are modifications of ether. The concept of ether, the author fails to note, is involved in logical difficulties. It is difficult to see how, as the author attempts to do, elasticity can be reconciled with that which is by definition capable of having none. Elasticity would seem to involve spatial intervals in which particles may move about. But the concept of ether attempts to negate the reality of the void. Not only is the concept of the imponderable ether self-contradictory, but as an explanation of motion it leads to an infinite regress of explaining motion by something else that moves. If ether moves, it must move in something, etc., etc. If ether does not move, then it is of no value for an explanation of motion. In other words, ether must be elastic, and yet, on the other hand, it cannot be. Thus the doctrine of the ether-continuum ends in inexplicable difficulties, the author being logically reduced to self-contradition in explaining wave transmission by it. In spite of logical weakness, however, this book will prove enlightening to the layman to the extent that he carries his critical faculties with him and to the extent that it indicates the mind of many scientific men of today. W. H. L.

The Einstein Theory Explained and Analyzed might be described as a commentary upon Einstein's *Relativity, The Special and General Theory.* As is well known this book of Einstein's was intended as a popular exposition of the subject, and is written in a clear, simple style which should be intelligible to anyone at all capable of understanding the theory. It is therefore difficult to see any justification for the writing of a book for the purpose of explaining a book which is itself meant to be a simple explanation of a theory by a writer who without any doubt whatever is the man of all men best qualified to explain it.

The author in the introduction expresses his intention of reducing the mathematical to a minimum. Doubtless many of the results of the Einstein theory can be stated without resort to mathematics, but to attempt an *analysis* of a theory so essentially mathematical as the one under consideration without going very deeply into mathematics recalls the answer which a certain mother is reputed to have given her daughter in reply to a request for permission to go swimming. In the one chapter where the author ventures into mathematics he remarks, "Those who do not like mathematics may omit the remainder of this chapter." We might add that until the mathematics, elementary as it is, is revised it were better omitted. Students of the theory of functions of a complex variable will be amused at the definition of the imaginary unit as an "inconceivable negative number."

The continual use of the term "the professor," by which the author evidently intends to refer to Einstein, is a feature which does not add to the attractiveness of the book. D. V. STEED.

Psychology

THE CRISIS IN PSYCHOLOGY, by HANS DRIESCH. Princeton University Press, Princeton, N. J. Pp. xvi-275.

To those who have been wandering in the psychological wilderness of the past two decades, seeking a "soul" or even a "mind" and finding nothing but "behavior," it will come as a distinct pleasure to find a book giving scientific defence to a conception of the self as a creative entity. Dr. Driesch does this in his latest book on *The Crisis in Psychology.* The most interesting portion of the book for the Personalist is that in which he discusses the "soul" as necessary to any scientific outlook on psychological fact.

Psychology has lately in its endeavor to rise to what many consider the height of pure science attempted to divorce itself from all philosophical or metaphysical implications. It is analogous to what in physics would be the abrogation of the dogma of universal force. It cannot be done without destroying the science itself, for all science rests upon universally assumed and but partially verified concepts. Driesch shows how psychology cannot ignore the metaphysical assumption without suicidal results. How impossible it is to leave out the "self" as primal reality he shows in his discussion of the Behaviorists:

> "The school of *behaviorism* denies introspection. Also, many behaviorists even go so far as to maintain that 'sensations' are the only objects of my consciously 'having'. . . . Even if the behaviorists were right in saying that the only class of conscious objects are sensations, this very statement would itself be the result of 'introspection'! And, further, to what class of objects belongs the *truth* of the behavioristic theory itself, that there is nothing but sensations? Is this specific truth itself a sensation? The behaviorists would hardly dare assert that it is, I fancy. So we may say, in short, that the behaviorist *forgets himself* in his psychological theory.

The soul, he holds, is first needed as a concept of order:

> "I posit the concept of *my soul,* since I know by intuition that in this way there will be order in the totality of all *my having consciously* in the course of time. I intuitively 'see' the form of order, *my soul* as an unconscious something endowed with becoming and with special forms of causality: as penetrating, so to speak, the totality of my *consciously having,* past, present, and future, and as uniting it into one great unity, but only as if it existed independently of my 'having' it."

He then proceeds to show the superiority of the concept "mind" or "soul" to that of "consciousness," or "content of consciousness," for scientific psychology, since "there is only one concept in normal psychology which is quite final: *My ordered and unconscious soul.*"

But, he asks, can the soul be affirmed as causal?

> "What, now, about the *causality* of the soul, or, in particular, about the causal nature of any particular determining, directing tendency?
>
> "Is such a tendency a causal agent or factor at all? If we call *causal* anything that determines the quality of an event by its own quality, it certainly is. But it does not stand in analogy to mechanical causality. Mechanical causality, as I have shown elsewhere, is causality between singularites, such as atoms; association in its crudest form stands in analogy to such causality. Mechanical causality is not causality as such, but corresponds only to one of four *a priori* forms of causality, one of them being *individualizing* or *whole-making* causality, realized, according to my system of vitalistic biology, in the organic world.
>
> "It is, to this schema of *whole-making causality,* then, that the causality of and 'in' the soul may be said to correspond."

It is impossible to give a fair idea of the book from such slight quotation as is necessitated by our space, for the thinking is close and looked at from the standpoint of a scientist. With his fundamental concept the author hopes to provide a place in psychology for "abnormal" psychology, since there seems now to be a body of "facts" available in the latter. His effort is good, for just at present we have the "normalists" set over against the "abnormalists" and with little promise that the ob-normalities of both may be reconciled in a genuine science. We wish we could say that the author had provided the basis for such reconciliation, but we cannot.

The book offers more material of value to personalistic thought than any psychology we remember, for many years.

R. T. F.

Essays in Metaphysics

THE PHILOSOPHY OF CHARACTER, by Edgar Pierce. Harvard University Press, Cambridge, Mass. Pp. xi-435.

It is a commonplace that a great gulf divides the psychological monster of abstraction and the living ethical man depicted by Aquinas, Carlyle and Emerson. Here as elsewhere science has killed in order to analyze. This problem is the burden of Mr. Pierce's volume on the metaphysics of personality, somewhat misleadingly entitled *The Philosophy of Character*. He has been guided by an attempt to establish a theoretical foundation for psychology that shall not only preserve the validity of scientific law and scientific method, and adequately explain the relation of mind to the physical world, but which shall at the same time give full recognition to the reality of the moral and purposive individual. "The present work," he writes, "has grown from the attempt to formulate the relation of purpose to the physical world, including the human body in the physical world. It is in a sense an introduction to a purposive psychology. . . . I am firmly convinced that some point of view must be found which shall preserve for psychology the reality of purposive action and shall also give full value to the influence of bodily changes on the flow of our thought and in the determination of our acts." After a review of philosophical theories, the author adopts a semipluralistic pan-psychism or monadism with which is combined the doctrine of synthesis or integration. This latter doctrine, similarly sustained by Stern in Germany, asserts that lower monads are integrated to form monads of higher orders. Thus man is a monadic integration. God likewise, immanent only, is the highest of all syntheses. The author, however, has not avoided a certain vacillation in his treatment of the one and the many (pp. 150-157, 382 f., 405ff., etc.). A thorough treatment of the categories of metaphysics and science culminates in an elaborate discussion of evolution. It is insisted that the point of view presented is most successful in explaining the facts. Recognition is made of the influence of McDougall and Bergson, and special indebtedness to F. C. S. Schiller is acknowledged.

W. H. L.

A THEORY OF DIRECT REALISM, by J. E. Turner. Geo. Allen and Unwin, London. Pp. 324.

Mr. Turner offers us a realistic theory of knowledge more "direct" than any existing form of realism unless it be, he tells us, that of Mr. S. Alexander in *Space, Time and Deity*. The logical implications of the course of our ordinary experience lead by a perfectly natural process, he says, to the naive realism of the plain man; unfortunately the plain man is not content with his ingenuous, unreflective assurance; he begins to reflect and at once by a kind of natural perversity he condemns his first innocent belief as "instinctive" or "intuitional" and thinks of it as having no rational justification. *Hinc illae lachrymae!* Mr. Turner takes philosophers to task for enticing the unwary into false routes. Just as Mr. Russell's proof that twice two is four, a truth which no one ever doubted, is long, involved, laborious and not very convincing, so Mr. Turner expends enormous dialectical skill in proving to us all that the plain man was right at the first shot and even before he tried.

Mr. Alexander's realism is not based on an argument at all, it is rather a definition of the knowing relation intended to clear the ground for a metaphysic of reality. It is only "direct" in the sense that it takes knowledge to be a fact and not a problem. Mr. Turner on the other hand appears to regard the problem of knowledge at least as the main task with which philosophy is concerned. From the standpoint of personalism we should say there is an initial mistake in his primary assumption. He appears to believe that the plain man is one who has perceptions and rightly attributes existence to them until his belief is disturbed by the arguments of idealists. In our view the plain man is much more truly described as a dreamer of dreams. He dwells in a world which his imagination creates and it is not until he becomes a philosopher that he relates his images conceptually and passes existential judgments upon them. If the plain man begins with perceptions and attributes existence to them, when and how does he make the distinction between the real and the imaginary?

Though Mr. Turner's standpoint is different from ours, we can read his book with much enjoyment. He has followed with intense interest the development of philosophical theory in the contemporary period and has a profound grasp of the essential problems.

H. WILDON CARR.

FIVE LECTURES ON THE PROBLEM OF MIND, by GUSTAVUS W. CUNNINGHAM. University of Texas Press, Austin, Texas. Pp. 120.

A psychophysical personalism, chiefly influenced by Bosanquet, is expounded in these lectures which are published as originally presented to a popular audience at the University of Texas. The author promises a more technical and comprehensive discussion at a later date. Way is paved for his constructive discussion by a criticism of behaviorism, the soul theory, the monadic theory, and the Kantian doctrine of the transcendental self. Behaviorism, on the one hand, fails to provide for consciousness and for cognition, the transcendent reference of meaning. The other theories are abstract, groundless, and without explanatory value. Mind, then, is immanent. It is what it is found to be, becoming, experience, change; it is not something possessed, but something pursued. Mind's "nature is to be sought within the changing experiences that constitute its life." But mind is not mere experience; it is organized experience, "systematic arrangement," "systematization of experiences." The continuity between animal and human mind is thus explained: "Between level and level there are no chasms." Several points in the discussion provoke comment. In defining "mind" in terms of experience and system, the author redefines experience in terms of "mental event." Circularity is doubtless necessary, but does it not suggest the well-known observation that only mind *can* experience, and that experience thus remains a problem rather than an explanation? The author has attempted to avoid this difficulty pointed out by Kantians, by an appeal to the emergent doctrine that physical complexes give rise to new qualities. Again, it is questionable whether too much emphasis is being placed today on the Heraclitic character of mind. For is not permanence as important a characteristic of mind as change? What possibly could change save the abiding? It still remains problematical whether "system" adequately characterizes that which experiences and abides in the flow of events. Possibly the reviewer is prejudiced in favor of a monadic view. At any rate the author has presented clearly and simply the doctrine sustained which, when all is said, has much in its favor. Suggestive criticism of the view of mind held by Russell and Gentile are given in the appendix. W. H. L.

An Intolerant Tolerance

TOLERANCE, by HENDRIK WILLEM VAN LOON. Boni & Liveright, N. Y. Pp. viii-399.

Tolerance reminds us of the man who would spoil a good story neither for the sake of the relatives nor the sake of the facts. We have here a readable sort of book in which practically all the heroes from Thales to Tom Paine are described as hack-writers and "colyumists" for the daily press.

The author is quite confident of his own tolerance, only fearing that his book may be misused by his "less tolerant fellow-citizens." When one starts a book on tolerance with the conceit that all who disagree with him are intolerant the result is not likely to be edifying to any great degree. He writes of tolerance intolerantly. He has an easy and breezy style and has many things to write that he is burning to set down, and many things that doubtless need to be expressed. Just now it is well to have the tocsin sounded calling men to greater tolerance, for, as in every age, if radicals and conservatives could have their way the average citizen would be driven into one camp or the other, and the two camps would then eat each other like the Kilkenny cats, making an end of tolerance, intolerance and the human race together.

The pleas for tolerance, as the author shows, have mostly been made by the under dog, as long only as he was that unfortunate animal, and we guess that Mr. Van Loon is for some reason identifying himself with the under dog and is no exception to the rule. The consequence is the old special pleading for *his party*. It is, for instance, scarcely a tolerant thing to represent Intolerance as entering Europe as the unique product of Christianity. He spends many pages expatiating upon the broad and universal tolerance of the Greeks. Of course he cannot deny the murder of Socrates for his opinions but we are asked to believe that this act was not at all due to intolerance. It was really, "as we now know," "a direct tribute to the spirit of intellectual liberty which prevailed throughout ancient Greece in the fifth century before our era." Likewise the Romans were examples of tolerance and all would have been well with the world if the Epicureans could have been left to run it, without the unfortunate intervention of Christianity. It is difficult to review a book which thus in the interest of hidden prejudices sets forth history in the name of "tolerance." It has been attempted again and again, by pious priests bent on religious whitewash of the iniquities of ecclesiastical systems, as well as by so profound a scholar as the anti-Christian Gibbon. The result is good in neither case.

From such a starting point there is certain to be distortion or misrepresentation of historic fact and in these Van Loon's book abounds.

Discussing Anaxagoras he represents the latter facetiously as persecuted by the Athenian Parent's League, for this teaching of "evolution." No one begins to know about Anaxagoras as much as the author writes about him, but what is known contradicts the statement of the author that Anaxagoras, "the professor," taught that all things had developed out of a vague substance called "original matter." What he is pleased to translate by the term "original matter" is in the Greek "mind-stuff." It is to say the least taking "great liberties" from that to make out a case for materialistic evolution. Another example of this looseness of statement is his attempt to place upon Christianity the blame for the early non-belief in the rotundity of the earth and its similarity to other celestial bodies.

> "The ancient scientists held it (the earth) to be one among a couple of billion of other stars. The Christians flatly rejected this idea. To them the little round disk on which they lived was the heart and center of the universe."

Now Aristotle, of all the ancients whose works are definitely known, could lay the best claim to being a scientist. Yet it was specifically due to Aristotle's great influence among churchmen, and his ridicule of the vague Pythagorean notion that the earth was a cylinder suspended on nothing that retarded belief in the Copernican astronomy. Nothing but ignorance or wilful prejudice could lead to an attempt to cast upon Christianity the onus of the Ptolemaic theory. The Ptolemaic theory emanated from the best scientific knowledge of its age in Persia, Arabia and Egypt, and if in the days before the Renaissance it was good religion, it was at that time likewise the very best of science. It was a scientist and professor of astronomy at the University of Padua who refused to look through Galileo's telescope because he considered it unscientific to disagree with the Ptolemaic astronomy and believe in the satellites of Jupiter. Why lambaste religion for not being more scientific than science itself?

In the chapter on Bruno is another example of carelessness. Speaking of Mocenigo who lured Bruno to return to Italy: "He was a weakling and a coward and did not move a finger when officers of the Inquisition appeared at his house and took his guest to Rome." "Weakling" and "coward" is rather a faint damnation for the man who denounced Bruno to the Inquisition and who acted as principal witness against him.

Students of history will be not a little amused to be told that Thomas Hobbes, the fierce apologist of the Stuarts and the defender of regal autocracy "exposed the Royalist pretensions in a volume that weighed not less than five pounds." But one dares hardly continue for fear of seeming hypercritical.

One wishes the work had been done more tolerantly and more in keeping with historical fact. There is need for strong protest against the intolerance which menaces the world. The author is correct in assuming that intolerance springs from fear, the fears of those in political, intellectual, ecclesiastical, or financial power who fear the readjustments made necessary by the advent of new ideas. But this is as universal as humanity and cannot be fairly claimed as a product of Christianity, except as Christianity has been the constant inspirer of new ideas. Christianity needs no special defense. Its votaries have shown themselves again and again as ruled by the weakness of their times, the intolerances of current ignorance, rather than by the principles of Jesus. Wherever organized Christianity has done this it has been untrue to the principles of its founder and it should be scourged that Christianity may survive; but what right has he to wield the scourge who denies or disturbs the meliorative facts?

Should one read this book? Surely, and for these reasons: it represents the wide revolt against outworn religious forms which whets its temper in extravagant statement, and one should know the mental fashions of his times: it is readable and interesting: it presents an unaccustomed view which may lead to further study: it is an attack upon intolerance of which there can never be too many. One could wish that the author had himself practiced tolerance, for then his attack would have been a thousand-fold stronger. R. T. F.

Philosophy and Sociology

THE SOCIAL THEORY OF GEORGE SIMMEL, by NICHOLAS J. SPYKMAN. The University of Chicago Press, Chicago. Pp. xxix-297.

Dr. Spykman's summary of *The Social Theory of George Simmel* is a masterpiece, and the volume which results is bound to become a hand-book for the student of sociology in the immediate future. But it is also of unusual significance for the specialist in philosophy. The author remarks that Simmel was "primarily a philosopher, not in the sense of a builder of metaphysical systems, but in the sense of an interpreter of life." This philosophical character renders him so much the more important for the student of sociology also, in view of the present philosophical poverty of sociological thought, and the present tendency toward an expansion in that direction, particularly in so far as the present efflorescence of sociology in Germany is concerned. Philosophically, Simmel's thought, we are told, was "a functional, a dynamic, a genetic relativism," founded on Kant. The synthesizing principle of his philosophy was "the eternal dialectic inherent in life itself."

Dr. Spykman's book is organized in three parts, suggested by Simmel's own declaration that "every exact science which aims at immediate comprehension of experience becomes flanked by two fields of inquiry of a philosophic nature. . . . an epistemology and a metaphysics." (P. 56) The three main divisions of the book are consequently: I. Social Philosophy (Methodology-Epistemology), II. Social Science (Formal Sociology), III. Social Philosophy (Metaphysics).

The epistemology of sociology (Book I) considers the problem of the prerequisites of socialization, "not in a historical sense, but in a logical and psychological sense." It asks how it is possible for individuals to create a society. In the course of this epistemological and methodological inquiry there are illuminating chapters distinguishing sociology from the social sciences and social psychology; from social philosophy; and from the philosophy of history.

Book II, dealing with "Formal Sociology," treats sociology, as "the science of human relationships, the theory of association." Simmel has especially emphasized the *forms* of socialization. To understand them is the central task of sociology. It is not a synthesis of the social sciences, but "a special, limited, and empirical social science." (P. 89) Like all sciences it rests upon an abstraction from the actuality. "In sociology this abstraction results from a differentiation between the form and the content of the social actuality." (P. 213) The special social sciences, such as economics and politics, "find their subject-matter by drawing lines through the historical actuality which encircle similar interest contents," sociology "comes into existence by drawing a line which, by intersecting all those already drawn, detaches the pure fact of socialization from its connection with the various contents." (P. 47) "Socialization," itself means, with Simmel, "the growing into a unity," which accords with the accepted usage of the term among American sociologists.

In Book III the philosophical aspect of the science is considered. This, in connection with sociology is, first, the metaphysical inquiry, which, in the fragmentary state of the actually demonstrable data "leads to an attempt at completion by means of speculation"; and, second, the inquiry dealing with "problems and questions regarding the meaning, the purpose, the absolute substance, and the religious significance of social life." (P. 58) This Part contains only two chapters, entitled respectively, "Money and Individual Liberty," and "Money and the Style of Modern Life." By arranging the materials in this way Dr. Spykman aims to present the method as well as the thought of the German philosopher-sociologist, for "in this way Simmel proceeds from a single religious phenomenon to the meaning of religion, from Kant, Schopenhauer, or Nietzsche to the significance of philosophy, from Rembrandt and Rodin to the meaning of art, from money to modern civilization, and finally from Goethe to the meaning of life itself. In this manner he searches in the single appearance of each sphere for the meaning of the whole." (P. 217)

It is safe to predict that an adequate comprehension of this dynamic thinker, even by means of the lucid presentation of Dr. Spykman, must lead sociological students to a fuller acquaintance with philosophy than has been considered necessary by many during recent decades.

CLARENCE MARSH CASE.

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The PERSONALIST

FOR OCTOBER
AND LATER ISSUES

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HENRY N. WIEMAN

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DELO C. GROVER

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Our Contributors' Page

Is man a pawn of social mass, or is the group a pawn in the hands of man? **The Editor,** still in absentia, discusses with usual insight the relation of *Personality and Society.* Friends of Professor Flewelling, many of whom have inquired concerning him, will be interested to learn that he is planning to return to Los Angeles in time to supervise the editing of the October PERSONALIST.

Dr. Anders Karitz, the most penetrating and sympathetic interpreter of *Thomas Thorild,* presents a valuable characterization of that remarkable but little known Swedish romanticist, poet and philosopher. Thorild, disciple of Rousseau, seems to combine also the virtues of Thoreau, Wordsworth, and Carlyle. Professor Karitz, born in 1881, is a member of the faculty of Lund's University, Sweden. A second and final section of the article will appear in the October PERSONALIST.

The poem *Mauna Loa* is of timely interest. It is contributed by **J. Corson Miller** whose verse has appeared in various magazines.

H. Wildon Carr of London and Los Angeles needs no introduction. Internationally known as a student and writer in the field of philosophy, his article on *The Light of Nature* provokes unusual interest. Doctor Carr, who has been visiting Professor at the University of Southern California, will continue his lectures there during the coming year.

The author of *Byron on His Contemporaries* sheds light on the poet's capacity as literary critic. **Allen R. Benham** is professor in the department of English at the University of Washington and has appeared in THE PERSONALIST previously as author of *Sidelights on English Romanticism.*

John Richard Moreland, poet-friend of THE PERSONALIST, presents verse entitled *Seen and Unseen.*

The writer of *Truth as a Usable Commodity* is not unknown to readers of THE PERSONALIST. The **Reverend Fred Smith** is pastor of the First Methodist Church of Newton, Kansas.

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To the Gentle Personalist

¶ PHILOSOPHERS and philosophies may be classified into two main groups, according as they start with metaphysics or put off metaphysics to the end. There are advantages and disadvantages in each mode of procedure. To leave metaphysics to the end is to risk radical defect in method and total loss in results. The whole work may be brought to nought. On the other hand if we start with metaphysics, if we seek before all else to know the ultimate and fundamental nature of the real, to recognize the God in whom we live and move and have our being, we are risking seizing the shadow for the substance, grasping at what is intangible and inscrutable, losing contact with the world of concrete existence and positive science which is surely with us.

¶ SOME PHILOSOPHIES take pride in the claim to be scientific, but the pride of philosophy should be to be philosophic.

¶ How are we to interpret the parts save in the light of our conception of the whole? We may learn much of the nature of a spider by seeing its foot under a microscope but only if first we know the whole spider. Spinoza tells us the great mistake of philosophers has been that they put off the knowledge of God to the end of philosophy instead of making it the beginning.

¶ Personalism aims at keeping for philosophy the philosophic ideal. It interprets reality from above downwards, not from below upwards. C.